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17 October 1977

TRANSLATIONS ON ENVIRONMENTAL QUALITY

No. 150

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HUNGARY

LEAD POISONING FROM CSEPEL FACTORY UNABATED

Budapest MAGYAR HIRLAP in Hungarian 28 Aug 77 p 6

[Article by Katalin Bossanyi: "Production And Poisoning; Smoke Over Ako Utca; Once Again About Metallochemia"]

[Text] "On 29 June, following a resolution by the capital KOJAL [Public Health and Epidemiology Station], the Nagyteteny factory unit of the metal works of the Csepel Works was closed down for lead contamination of the environment."

In past years our paper has reported on a number of occasions on the oppressive working conditions and developmental-organizational mistakes of the Metallochemia works in Nagyteteny. This justifies a strong emphasis in saying that no organ called on to take action can say that they did not know about these conditions.

An Umbrella in the Factory Courtyard

Actually it has been known since it was established, at the end of the 1920's, that this factory, working largely with lead, endangered the health of its workers and of the environment. The middle and end of the 1960's were the nadir; many workers became ill and there was hardly one technical worker who did not suffer some symptoms of lead poisoning. Most recently, in 1973, also in an article titled "Production and Poisoning," Dr Laszlo Borda, the since retired chief physician of the capital KOJAL, made the following statement:

"Today lead poisoning can be cured. The biggest problem at Metallochemia is that, despite our protests, cured workers frequently work on in the same factory unit and so get lead poisoning again and again.... I recently did some calculations and it turned out that in 10 years the supplementary pay for those sick, the costs of treatment and the value of work days lost came to almost 80 million forints!"

At that time the factory got new leaders who promised radical changes. They did take action, lead contamination decreased, but a final solution did not come.

Lead contamination from the factory again increased in March and April of this year. Work is continuous, day and night, and even on holidays the white smoke poured from the chimneys showering the environment with "lead snow." The workers carried umbrellas in the factory courtyard to protect themselves from the lead dust. There was no protection for the inhabitants of the vicinity. The roofs of the houses, the trees, the gardens were covered with gray lead dust. First the dogs and cats died; then, on 19 May, a 3 and a half year old little boy was taken to the Pal Heim Hospital and on 14 June a 16 month old little girl and her 8 and a half year old brother. They required hospital treatment for a month and a half and 3 weeks respectively.

At the Pal Heim Hospital

"We have treated three small children from Ako Utca, in the immediate vicinity of the Metallochemia Enterprise," said director and chief physician Dr Jeno Sarkany. "Laboratory instruments showed an accumulation of lead in urine samples. After treatment, we released them in good condition. We received another three children during this period and four were sent to the MAV [Hungarian State Railways] Hospital suspected of lead poisoning. In their cases, however, the tests did not show pathological changes."

Upon complaints by the populace, the capital KOJAL carried out an inspection in the factory and vicinity at the end of June. They established that the lead being released into the air was 30 to 40 times the permitted value! For this reason, on 27 June, in conjunction with the Ministry of Health Affairs, it was decided that the factory must be closed down! Those interested argued, cited the interests of the people's economy and again promised that they would take measures to end the contamination. The series of events includes the fact that a rally was held in Ako Utca under the leadership of the district council member to which they invited a representative of the factory. The mood was tense. The inhabitants said, The factory people have not kept their promises. Some threatened violence.... The factory was closed down the next day.

I made inquiries at the Ministry of Health Affairs of Dr Ferenc Gacs and Dr Bela Hegedus, the chief of the public health and epidemiology main department and his deputy. They said that they had started broad scale tests although the final results were not yet in. They added that in July they tested every child under 10 in the vicinity of Metallochemia but did not find a trace of recent lead accumulation. Screening of the adult population has begun too.

I looked up Dr Borbala Bodo, the former factory physician of Metallochemia:

"In the closed, lead work areas of the factory there are ventilators to draw off the lead dust but it pours out on the courtyard and environment. Those working outside are completely unprotected. I could not get them to stop sending those afflicted with lead poisoning back to their previous work areas. The chiefs said, 'There are too few people,' but for a little award, for higher wages the workers too undertook the dangerous work. And they regularly worked overtime instead of the authorized 6 or 7 hours. When I noted that there were more and more recurring cases and even new lead cases I soon got the impression that it would be better if I sought a new place of work." (During 2 years, there have been three factory physicians.)

Next Door and Across the Way....

Mrs Istvan Mergi worked as a nurse in the "lead factory" for 12 years:

"The health of the factory workers is deteriorating; we have noticed new cases among the porters and maintenance workers too. Most of the workers take medicine, 'Profiled,' and eliminate the lead from their system. And I live on Ako Utca too and I noticed that the Szalontai boy had the same symptoms as our adult lead patients...."

According to the final report on the son of auto-assembler Ivan Szalontai his urine showed 140 gammas of lead when he was admitted to the hospital, which rose to 3,200 units after the first elimination ejection. The tolerable limit is 150-200 gammas. Tests of the family (husband, wife and older children) showed lead contamination. Two children of neighbor Mrs Imre Vegh went to the hospital. It appears from the final report on one and a half year old Virag that the lead content of her urine was 7,000 gamma. Mrs Zoltan had 3,400 gammas. The third neighbor, Bela Szucs, a worker at the Hungaria Synthetics Processing Enterprise, was in the hospital for 4 months. Since he did not work in the "lead factory" they did not suspect lead poisoning at first but it was then demonstrated.... Lead was found to a greater or lesser degree in the Zvatt family across the way, in the head of the family, in his wife who works at Metallochemia, in the two boys and in their daughter-in-law. The older boy, a metal worker at the boiler factory, has just come back from the hospital. His diagnosis: Saturnismus nun grand, which is to say minor lead poisoning.

Those who do not understand it cannot adjust to the diagnosis in Latin and since they receive no explanation fear spread all the more. Is smoke still coming from Metallochemia?...

Why Now?

This factory has been producing for decades. So why are people complaining now? Well, the new factory leadership in 1973 really wanted to act. They

tightened work discipline, introduced local ventilation and began to build central dust separation equipment which was to have been completed by the end of last year. They ordered the equipment and contracted for construction industry capacity. Last year Metallochemia was combined with the Metal Works, with good reason and in an economically rational way. And this immediately put a stop to the dust separation operations.

So the environmental protection development was left unfinished. In addition, the obsolete equipment of the factory was being used to the maximum last year and the plan for this year was even higher! To produce more on the old equipment with the same technology was possible only at the expense of technical parameters, with a greater contamination of the environment. The product structure was changed as compared to earlier; they processed more decomposing storage batteries and this plus the increased production of the shaft kilns increased the harmful effects. Instead of converter copper they are manufacturing black copper this year, also highly lead contaminating.

Quality suffered on account of the high overtime, the unhealthy working conditions and the strong quantitative incentives. And this meant that a good bit more lead than is technologically justified got into the slag and was carried off through the chimneys.

Raw lead production was 4,600 tons in 1975 and 7,000 tons last year. In the first half of this year they processed 4,000 tons. According to the environmental protection prescriptions the permitted per hour emission of lead for the 58 meter tall chimney of the factory is 208.6 kilograms. The excess in 1975 was 25.6 kilograms of lead per hour. If we multiply this by the number of hours of operation, 4,936, then 126 tons of lead were transported into the air that year with the smoke, 197 tons last year with 7,704 hours of operation. There are no data for this year yet except that the factory trade union committee raised the authorized 6,000 hours of overtime of last year to 12,000....

I wanted to talk with Janos Karkalik, secretary of the Csepel Works trade union committee, but I only received this message: "There is a news-ban on the subject." It is worthwhile to read the letter of the industrial development main department of the Ministry of Metallurgy and the Machine Industry which Mrs Imre Vagh, worrying about her two children, received:

"I have reviewed what you wrote in your letter about the lead contamination of the air caused by the Nagyteteny factory unit of the Metal Works of the Csepel Works, on the basis of which I inform you as follows:

"On the basis of tests made jointly by KOJAL and the National Public Health Institute in June 1977 it has been established that the average contamination of the residential area within about 200 meters of the factory is far from satisfying the air quality norms authorized for

protected areas and thus the enterprise ceased on 29 June 1977 the processing of lead waste which contaminates the environment.

"Work will not be resumed until completion of investments to decrease lead contamination--these are now under way at a cost of about 23 million forints. After installation of the new environmental protection filtering equipment full scale operations will be preceded by test manufacture in the course of which adherence to the environmental protection prescriptions and norms must be checked by official measurements. This will ensure that only equipment operating adequately from the viewpoint of environmental protection will be placed into operation in the future. In order to further decrease air contamination steps have also been taken at the enterprise to carry out as soon as possible a complete reconstruction of lead waste processing.

"On the basis of the measures reported above I ask you to be reassured concerning the measures taken to end the dangerous emission of contamination and to be so kind as to inform your neighbors of this. Permit me also to wish with a sincere heart the full recovery as soon as possible of the young children being treated as a result of the environmental contamination...."

But reality is otherwise and there is no reassurance on Ako Utca! The factory has not been closed down but rather has converted to production of black copper which also has a high lead content and which also contaminates the environment. So the complaints of those in the area are real ones and a visitor can see for himself that the dust and smoke are still pouring from Metallochemia....

This is a violation not only of the environmental protection law but of the right of everyone to protection of health and physical fitness! The workers and the inhabitants of the area, in harmony with our legal system and our principles, should stick to prevention, protection and proper medical treatment--to a life free of smoke and danger!

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CSO: 5000

VENEZUELA

SOURCES OF ENVIRONMENTAL POLLUTION IDENTIFIED

Lethal Gases From Plastics

Caracas EL NACIONAL in Spanish 17 Aug 77 p C13

[Article by Eduardo Delpretti]

[Excerpts] Trash incinerators in certain buildings will be eliminated. In their place, stationary compacters will be installed. Within a short period of time, all buildings and commercial centers in the metropolitan area must have such compacters.

Over 2 months ago, a round table was held by the Industrial Medicine Department of the Social Security Institute. It was stated at the round table that the 700 buildings in the Caracas valley which still use trash burners constitute a real threat to the health of Caracas residents.

Speakers at the round table said that the rubbish burned includes plastic residues which, when subjected to high temperatures, produce incomplete combustion and send a series of lethal substances into the atmosphere.

Those attending the meeting underlined the risk of polyurethane, which is commonly used in the making of rubber used to manufacture shoes, automobile parts and coating substances. When burned, it results in the concentration of highly toxic and lethal gases such as hydrocyanic acid.

The discussion also dealt with risks produced by polyvinyl chloride, which is widely used. Workers handling it may develop malignant liver tumors.

The round table on "Toxicological Work Risks and Environmental Risks Resulting From Plastics" caused a commotion. Through the Directorate of Social Protection, the Attorney General's Office asked the Ministry of Environment and Renewable Natural Resources to take urgent measures to prevent the grave harm to the atmosphere of the capital caused by trash burning.

Dr Torres, director of the agency, said that the request resulted from information in a newspaper describing the round table. "The claim may or may not be true," she said, because there were no reports or announcements. Dr Torres said that her office had no research team.

"If there are violations of standards, we verify them on the basis of a specific report," she said. "We then ask for the opening of inquiries."

The report was made at the meeting on "Toxicological Work Risks and Environmental Risks" by Dr Rafael Azopardo, specialist from the Social Security Industrial Medicine Division, Dr Franco Bellini, professor at Simon Bolivar University, and Asdrubal Lares and Julio Medez, both professors at the Central University of Venezuela.

Also present were members of the Venezuelan Society of Industrial Medicine and representatives from the plastics industry, including the members of the board of the Plastics Industry Society, Avipla.

Jose Luis Medez Arocha, head of the General Sectorial Directorate of Environmental Administration, knew nothing yesterday morning about the message sent to the ministry from the Attorney General's Office.

"Perhaps out of ignorance," he explained, "the note was sent to the General Sectorial Office of Planning and Supervision of the Environment.

Dr Mendez Arocha did not wish to express an opinion without knowing the text of the request from the Attorney General's Office. Nevertheless, he said that in order to take action against smoke emissions by trash burners in buildings, "it would not be very easy."

"We must first make studies, take samples, analyze the winds before eliminating such burners."

He was then asked whether the Ministry of Environment was working on the matter.

"The entire ministry is working on it. We have people from Disca developing a program on pollution in the valley of Caracas. We are making a diagnosis, but with great difficulty because there are not enough specialists in the country."

The law grants the Metropolitan Urban Cleanup Institute, the IMAU, the power to determine what equipment should be used to get rid of trash.

As a result, the IMAU is beginning its campaign against environmental pollution in Caracas. Its president, Col Luis Alberto Pena Prieto, said that Article 3 of the Law on Nationalization and the Coordination of Services for the Collection and Processing of Residues, Rubbish and Trash in the Metropolitan Area of Caracas gives him competence in the field.

"We know that trash burning is one of the ways in which the environment is polluted. As a result, such incinerators now being used in some buildings will soon be eliminated."

The Metropolitan Urban Cleanup Institute intends to replace them with stationary garbage compacters, which would prevent pollution and reduce the volume

of trash. This would in turn facilitate garbage collection, handling and hauling to sanitary fills.

The measure will not only be taken for buildings with such incinerators, but for all buildings and trading centers in the capital city.

Vehicle Emissions, Incinerators

Caracas EL NACIONAL in Spanish 17 Aug 77 p D4

[Article by J. Lossada Rondon]

[Excerpts] The minister of environment and renewable natural resources has revealed that the study on pollution in Caracas is being completed and that it will be published in the last quarter of this year.

In response to a question, the minister said that automobiles produce some 140 tons of contaminants in Caracas per day and that trash burners in 700 buildings produce another 7 tons.

"My office is studying a regulation that would require an inspection of incinerator installments and control of sources of pollutants. It should be noted that many of these incinerators produce pollution because they were never properly installed and as a result of poor maintenance."

Minister Gabaldon is an expert who has mastered his field and who understands better than anyone else the importance of the office to the present and future life of this country.

Oil Spill in Lake Maracaibo

Caracas EL NACIONAL in Spanish 17 Aug 77 p C4

[Excerpts] Distrito Urdaneta, 16 Aug--An oil spill has inundated numerous fishing hamlets along the shores of Lake Maracaibo and over 500 fishermen located on the coasts of the Urdaneta district in the Puerto Nuevo sector and as far as Barranquitas in Perija district have lost nets and other fishing equipment worth an estimated 500,000 bolivars.

Albino Hernandez, secretary general of the Zulia Fishermen's Union, reported that the spill occurred in the lake on Wednesday of last week, possibly in the Lagoven facilities in Urdaneta district. The oil was carried by the waves to the settlements situated on the shores of the lake, where it inundated numerous hamlets and forced the occupants to move out.

In the Puerto Nuevo sector of Urdaneta district, where nearly 100 fishermen live, the spots of oil reach the very edge of the road linking the two districts. Inside the humble homes made of wood and coconut palms, one can see the floors covered with the black substance, rendering movement impossible.

The oil spill goes as far as Barranquitas in the district of Parija, where it is said that another equally large number of fishermen have been affected.

Hernandez claimed that the spill occurred in the Lagoven facilities on the coast of Urdaneta district, but he admitted that officials from the Ministry of Mines in Maracaibo who are familiar with the case say that the origin of the spill is still unknown and that the proper investigations are underway to determine who is responsible.

Hernandez said that he will take his complaint directly to the Venezuelan Petroleum Company, since in his view, that enterprise owns all oil companies operating in Lake Maracaibo.

In addition to the damage caused to fishermen by the spill of these 800 barrels of oil, the situation of the pollution of the lake is becoming dangerous.

The oil spread all along the coast of Urdaneta district and part of Parija district. Furthermore, these areas are the scene of public beaches and resorts and provide good fishing.

Mercury From Chemical Plant

Caracas EL UNIVERSAL in Spanish 11 Aug 77 p 2-8

[Text] An exhaustive study of the Moron Petrochemical Complex aimed at requiring proper supervision of mercury wastes generated by the plant is being made by the Ministry of Environment and Renewable Natural Resources, according to an announcement made by Jose Luis Mendez Arocha, director general of environmental administration.

According to Mendez Arocha, one of the aspects of concern to the community of Moron and the public in general has to do with mercury pollution from the chlorine-soda plant of the petrochemical complex.

However, the chlorine-soda plant is now closed, our informant said, due to modernization work in progress. As a result, no mercury waste is being produced.

At any rate, the Ministry of Environment will continue to ensure that all the necessary measures are taken, measures that will help to prevent, control and reduce any type of danger from the complex, he added.

The Ministry of Environment and Renewable Natural Resources, conscious of its task of improving the quality of the environment, is exercising action aimed at overseeing the entire process beginning with the identification of resources, their development and exploitation in order to provide man with better conditions for his well-being but without irreversible damage that could compromise the future.

Asbestos Contaminates Food Supply

Caracas ULTIMAS NOTICIAS in Spanish 19 Jul 77 p 6

[Text] Food contaminated with asbestos, especially products derived from wheat and sausages, is being sold freely in the country, thereby endangering the lives of consumers.

This announcement was made at a conference held by Dr Amilkar Torrealba from the Industrial Medicine Division of the Venezuelan Social Security Institute, when he spoke before a group of professional people doing their master's degree in public health.

Dr Torrealba said that the statement is based on the fact that food industries such as Diablitos Underwood, in Cagua in the state of Aragua, and Puro Pan, are located near enterprises which use asbestos in their industrial processes. The asbestos is an indestructible dust made up of harmful agents that cause cancer.

He explained that in the case of the plant which processes food products derived from wheat, it is located in Palo Verde (metropolitan area), only a few meters from the Baldosas Plastigen factory. This is an enterprise whose air extraction system is one which picks up the asbestos dust particles and expels them into the atmosphere, thereby contaminating the environment. The sanitary measures needed to prevent contamination and fatal consequences are not taken.

Dr Torrealba also said that out of the 3 million workers in the country, a high percentage of them handle asbestos, since it is used in factories which produce friction materials, textile goods, brake band mounters and asbestos-cement and asbestos-plastic products.

"Of the 4 million [sic] tons of asbestos consumed throughout the world, 14 million tons enter the country without any type of control or sanitary permit. Furthermore," he stated, "only a 1-percent tax is paid and in most cases, factory owners obtain exonerations."

The Social Security specialist explained that the most frequent types of pathology found among workers in contact with asbestos are otorhinolaryngology abnormalities (ear, nose and throat), in addition to asthma, coughing and chronic bronchitis.

Dr Torrealba said that preventive measures include, in addition to good protection for workers, keeping the contaminating agent in closed environments and the burial of waste in double plastic bags.

Chlorate Pesticides

Caracas EL UNIVERSAL in Spanish 27 Jul 77 p 2-20

[Text] Maracay, 26 July -- The council of the School of Agronomy of the Central University of Venezuela and the Student Center are asking authorities

in the ministries of Agriculture and Livestock, Health and Environment to prohibit the use of chlorate pesticides in Venezuela.

The petition will place special emphasis on the improper use of these chemical products to control pests in produce crops, vegetables, forage crops, fruit trees, oil-yielding plants and in general, those crops directly consumed or subject to industrial processing for human or animal consumption.

The dean of agronomy, Dr Mauro Fernandez Rodriguez, said, when asked about the reasons for requesting the ban, that the basis for the request stems from the great ecological harm being caused by these products in the world and particularly in our country.

He explained that the harmful effects of chlorate pesticides are enormous on wildlife, particularly the fauna, for they affect fish, fowl and mammals, including man.

"These compounds last for a very long time in the environment," the dean added, "since they may remain in it for 20 years or more after being applied. The main characteristic of the products is that they resist being broken down by environmental conditions. Furthermore, since they are soluble in animal and vegetable oils and fats, they are increasingly incorporated into live organisms, whence it is difficult at this time to locate any organism that is not contaminated by residues of chlorate insecticides."

Dean Fernandez, who is also a specialist in toxicology and pesticide residues and a student of the contamination of food, the soil and water by insecticides, says that it is difficult to eliminate them since as they are soluble in fats, they build up in the human body, taking advantage of the fact that our detoxification mechanism is not capable of eliminating them.

"In many cases, what it produces is even greater poisoning as a result of the elevation to more toxic compounds," he said.

"How can that be possible?" he was asked.

"If, for example, we consume food contaminated with Aldrin, the organism transforms it into Dieldrin, which is much more dangerous than the former product. Moreover, the successive accumulation in animal as well as vegetable fats means that these elements can continue to be transmitted in the links of the food chain. This in turn means that from the soil or the water, they can be transmitted to a plant and from there to an animal, until they reach man, by means of any transforming mechanism."

The dean of agronomy then said that in any one of the products derived from an animal fed with forage crops on which chlorate pesticides were used, some portion of poison will be present.

"What effects can these chlorates produce in man?"

"These residues can have many consequences. They can change the organism's detoxification mechanism. This consists in an increase in the metabolic capacity in such a way that when man consumes substances which are basic to growth, development or health, when he ingests vitamins, minerals or antibiotics, he eliminates them very rapidly. It can then happen that certain treatments prescribed by doctors to control a given disease -- which under normal circumstances they would -- do not produce the expected result due to the acceleration of the patient's detoxification function."

When questioned about studies made in Venezuela and by the School of Agronomy of the Central University of Venezuela, Dr Fernandez responded that "we have been developing a line of research into problems of environmental contamination by insecticides and we have been able to show that they are extremely critical.

"We have been able to demonstrate that in Embalse de Suata, when BHC was used in that area to control glowworms in sugar cane, the level of contamination went as high as 7 parts per million."

11,464
CSO: 5000

VENEZUELA

SUMMARY OF ENVIRONMENTAL CONFERENCES, PROGRAMS, PROJECTS

Environmental Engineering Pilot Project

Caracas EL UNIVERSAL in Spanish 6 Sep 77 Section 2 p 13

[Text] A seminar on the Venezuelan Environmental Engineering Capacity will be held in Caracas from the 19th to the 23d of this month, with international experts on subjects related to the environment participating.

This event, sponsored by UNESCO and the CONICIT [National Council for Scientific and Technological Research], will be launched by the minister of environment and natural resources, Arnoldo Jose Gabaldon.

During the work sessions, aspects pertaining to the environment and also the inclusion in basic engineering studies of the general concept of biology and ecology and their implications for professional practice will be considered.

Various pilot projects will be analyzed at this seminar, including the Venezuelan project, which involves the advancement of studies related to the environmental concepts in the country's universities.

Also, the sponsorship of postgraduate programs in various fields of environmental engineering, based on the priority areas in industrial activity, will be considered.

With regard to continuing education, seminars of a national and regional nature have been held on various aspects of the environment, in collaboration with the Venezuelan Engineers College.

The meeting to be held from 19 to 23 September in Caracas will be attended by representatives of various countries throughout the world, in connection with the holding of the Second Meeting of the International Multidisciplinary Work Group on the Training of Engineers and Technicians in Environmental Education, sponsored by UNESCO.

The program of the Seminar on Venezuelan Environmental Engineering Capacity will include the following:

1. Evaluation of and suggestions on UNESCO's plan of action, where the recommendations of the International Conference on Education and Training of Engineers and Technicians held in New Delhi in April 1976 are concerned.
2. Revision and updating of the conclusions and recommendations of the first meeting held at the UNESCO headquarters in Paris in September of 1975.
3. Report on the UNESCO International Program for the Training of Engineers and Environmental Education and the United Nations Program for the Environment.
4. To study the results and prospects of the pilot programs on the training of engineers in environmental education in the Philippines, Venezuela, Czechoslovakia, Spain and Costa Rica.
5. To learn about the humanistic, social and industrial safety aspects of the education of engineering.
6. To agree on activities to be pursued by the work group and by UNESCO in the programs related to the environment in the education of engineers in the coming years.

It is hoped that the United Nations can be persuaded to promote the gaining of awareness by the present and future generations of engineers and technicians about the importance of the environment in their professional work, such as to advance where the goals of environmental education agreed upon at the International Seminar in Belgrade in October of 1975 are concerned, to wit:

"To insure that the world population gains an awareness of the environment and an interest in it and the related problems and to insure the existence of the knowledge, aptitude, motivations and desires necessary for individual and collective work in the search for solutions to current problems and to the prevention of those which may subsequently develop."

Symposium Discusses Legislation Needed

Caracas EL NACIONAL in Spanish 7 Sep 77 p C6

[Excerpts] The Venezuelan environmental legislation in effect is made up of provisions adopted in various periods and for different purposes. It regulates environmental protection only incidentally, which has given rise to contradictory regulations in some cases and dangerous legislative gaps in others.

The Ministry of Environment and Renewable Natural Resources believes that it is necessary as a result to bring the digest of legal norms in effect in this field up to date, so that it can serve as a basis for the solution to the problem.

In the work of protecting the environment against destruction, the state needs a legal base to condition and regulate its activities. It also needs the legal text necessary to reconcile the conduct of private individuals with the requirement posed by the threat of this environmental destruction.

The activity of the ministry must not stop with the compilation of the norms in effect. It must regulate those aspects wherein the norms in effect are not consistent with the current needs of the country.

It is for this reason that the unity of environment and renewable natural resources has placed the development of the legal norms in the environmental field on the agenda for a symposium on the 15 basic programs of that ministry.

This event, sponsored by the ministry and the National Health Projects, National Parks and Metropolitan Urban Cleanliness Institutes, will be held in Central Park from 8 to 10 September.

The goal and the justification of this program are expressed in the need to articulate the complex of activities converging on the target of providing the national executive branch with a body of norms and a uniform method of interpretation and application of them for the regulation of the conduct of private persons and public bodies as a function of the conservation, protection and improvement of the environment and the renewable natural resources.

This symposium will then submit the 15 basic programs of the Ministry of Environment and Renewable Natural Resources for broad discussion, with a view to perfecting them, obtaining the cooperation of the sectors involved and encouraging the officials entrusted with their development.

The formal registration of participants will take place from 1000 hours to 1900 hours today. The advisory committee on the event is made up of Doctors Enrique Tejera, Arnoldo Gabaldon, Antonio Moles Cubet, Pablo Herrera Campins, Rafael de Leon Alvarez, Tobias Lasser, Eduardo Mendoza Goiticoa, and Prof Francisco Tamayo.

The programs to be dealt with, in addition to development of the environmental legal norms, include the following: control of atmosphere pollution in the major cities and areas of industrial development; collection and final disposal of garbage and other solid wastes, environmental education and citizen participation; and prevention and protection against floods.

At 0900 hours on Thursday, the minister of environment and renewable natural resources, Arnoldo Jose Gabaldon, will inaugurate the symposium. Dr Gerardo Budowski, former director of the International Union for the Protection of Nature and Natural Resources, will then deliver an address.

The work group in which the basic programs of the ministry will be discussed will be launched the same day, at 1400 hours. The detailed program for the work, with room assignments, will be drafted on the basis of the preferences indicated on the registration and participation form.

Research Organization Details Projects

Caracas EL UNIVERSAL in Spanish 28 Aug 77 Section 2 p 7

[Text] Venezuela has embarked on a stage of development bringing it face to face with a serious environmental deterioration problem. As industrial progress advances, pollution becomes greater and more dangerous, for which reason a means of combating this negative aspect is being sought, in order to achieve a balance between the process of socio-economic development and the conservation of the environment.

In this connection, the Ministry of Environment and Renewable Natural Resources, through the DISCA [Office for Research on Environmental Pollution], is doing environmental research work in order to learn of the causes and the solutions to the problem of deterioration of the environment and the quality of life.

What the DISCA Is

The Office for Research on Environmental Pollution was created in September of 1974, with the specified goal of engaging in research leading to the solution of the problem already seen to be approaching. It was established at the suggestion of the Ministry of Health and Social Welfare, and is now under the jurisdiction of the General Sector Office for Environmental Data and Research at the Ministry of Environment and Natural Resources.

At the beginning it employed groups of researchers who worked in isolated fashion in this field. The most important group was that operating in the old SAS [Health and Social Welfare] Water Pollution Control Session, under the supervision of Dr Gustavo Parra Pardi. This group had done research work on its own initiative, on the contamination of the beaches along the central coast, in 1971, and an overall health study of the Yaracuy River, in the years 1972 and 1973. For this latter project they won the Abel Welman Prize a year later, for the best research work submitted at the 14th Inter-American Sanitary Engineering Congress.

Real Situations and Projects

With the establishment of the DISCA, priority areas requiring immediate attention emerged. It was proposed that serious overall studies be carried out on "Pollution and the Main Tributaries," "Atmospheric Pollution in the Caracas Valley and the Cities of Francisco Fajardo and Diego de Lozada," "Collection, Treatment and Final Disposal of Solid Wastes on Margarita Island," "Environmental Hazards at the El Tablazo and Moron Petrochemical Complexes," as well as another on the development of the stabilization lakes.

Currently, research is advancing on the biological control of mosquitoes through fish species which eat the larvae, as a means of combating certain illnesses and to limit the use of pesticides used against such epidemics. Another project is the research to determine the trends in the appearance and the accumulation levels of persistent pesticides and certain heavy metals, begun 2 years ago and now to be expanded with the incorporation of an assessment of the level of mercury contamination in the water, the biota and in sediments.

Several months ago the DISCA undertook two new research projects: one on the contamination of Valencia Lake and the other on the environmental pollution in that lake's basin. The former is incorporated in the 100 priority mini-environmental activities.

Expansion for this year will include the lagoons treating heated waters from a paper factory, a sugarmill and a brewery, and for the coming year plans call for studies of the atmospheric deterioration in Maracaibo and the neighboring areas, and another on the collection and final disposal of solid wastes, also in the capital of Zulia.

Subdivisions

The DISCA includes the offices for research on ecosystem control, assessment of environmental impact, industrial energy and minerals, and the environmental laboratory.

The DISCA is entrusted with the delicate mission of studying the evils resulting from the development of the country and making suggestions to minimize their negative effects.

International Experts Attend Symposium

Caracas EL UNIVERSAL in Spanish 31 Aug 77 Section 2 p 16

[Excerpts] Dr Gerardo Bodowski, former director of the International Union for the Protection of Nature and Renewable Natural Resources, and currently the head of the Department of Forest Sciences at the Inter-American Agricultural Sciences Institute, with headquarters in Costa Rica, will give a lecture on the subject "Significance and Importance of Environmental Protection and the Conservation of Renewable Natural Resources" in Central Park on 8 September.

On that same day, the present mayor of Dijon, in France, Dr Robert Poujade, is scheduled to give an address on "The Experience of the French Ministry of Environment."

Environmental Education Program

Caracas EL NACIONAL in Spanish 25 Aug 77 p C-13

[Text] Barquisimeto, 24 August. Some 250 educators on all levels enrolled in the professional teaching advancement courses attended the meeting held to discuss the problems of environmental education, which was held at the headquarters of the Pedagogical Institute in this city. The meeting was coordinated by Robles Asuaje, a member of the organization committee for the courses.

The educators participating analyzed the programs of the Environmental Education Office of the Ministry of Environment and Natural Resources and their relation with the programs of the Ministry of Education in the field of environment and conservation of renewable natural resources. The gathering was attended by educators from all the regions of the country, who contributed information on the environmental situations in their zones of work. The Office of Environmental Education will put this information to practical use to advance the apprenticeship of the students.

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POSITIVE STEPS TAKEN TO IMPROVE ENVIRONMENTAL QUALITY

New Ministry of Environment

Caracas EL UNIVERSAL in Spanish 31 Aug 77 p 1-2

[Article by Amadis]

[Excerpts] The government has created the Ministry of Environment, the ministry which will now have the difficult and delicate task of improving the living environment of the so-called deprived classes, remodeling and rehabilitating the barrios, building new housing areas where slum residents can be relocated, cleaning up and reforesting areas which have now been invaded and which are completely lacking in sanitary conditions, areas whose waste waters are contaminating the city while causing landslides in the lower slopes of the hills on important ways of communications and obstructing the channels of rivers and gorges. These areas foment crime among their youth, who are traumatized by their way of life.

Today we can and must actively seek solutions to this grave problem, making full use of authority to prevent the evil from spreading until it reaches a level that will turn it into an unsolvable problem -- a stage we are fast approaching. We must assign, from our current budgetary surplus, at least 2 billion bolivars as the annual budget of the Ministry of Environment, which funds should be exclusively earmarked -- as we have said -- for the remodeling and rehabilitation of the barrios, the relocation of persons living in the shantytowns and the sanitation of the zones, so that if over the next 5 years we do not achieve a complete solution, then at least we shall obtain a considerable improvement in the way of life of that great sector of our population.

Mandatory Imprisonment for Polluters

Caracas EL NACIONAL in Spanish 27 Aug 77 p 1

[Text] Guanare, 26 Aug--The governor of the state of Portuguesa, Dr Asdrubal Monsalve Herrera, announced today a mandatory 72-hour arrest for any person caught in flagrante delicto in activities which generate pollution and damage to the atmosphere.

He announced that the measure is contained in a decree to be issued by his office next week for the purpose of halting the destruction of certain areas threatened with devastation due to the harmful action of many persons who have still not become aware of the importance of conservation and the improvement of our environment.

"In the face of this situation," the governor vigorously stated, "we are going to act without any hesitation whatsoever, carrying out 72-hour police arrests of all environmental polluters."

The governor then added that in Guanare, certain cases are being investigated, especially areas of concentrated pollution which much vacant land has become in the central area of the city. The purpose of the investigations is to establish responsibilities and apply the corresponding penalties.

Ships Polluting Harbor Fined

Caracas EL UNIVERSAL in Spanish 9 Aug 77 Section 1 p 13

[Article by Gumersindo Villasana]

[Text] Maiquetia, 8 Aug--The La Guaira Port Captaincy has fined a number of shipping enterprises because their vessels are dumping pollutants into the sea, including waste products, fuel, steel scraps and paint and because they are cleaning their boilers in the bay or at the piers.

This information was provided by Captain Alejandro Marin, La Guaira port captain, who said that fines between 500 and 1,000 bolivars had been meted out to the following vessels: the "Gerda," a British flagship, the "Rosa Daphne," also British, the "Japan Cooba," a Japanese vessel, "Ciudad de Caracas," which belongs to the Venezuelan Navigation Company, and "Capitan Bon."

Captain Marin said that the Port Captaincy has been watching boats outside the bay and that it had detected the aforementioned irregularities, due to which it proceeded to apply the fines, which have been made known to the respective shipping agencies.

In particular, recent weeks have seen an increase in complaints from persons living in the barrios of La Guaira, since the smoke from the vessels causes serious damage to and even destroys clothing, in addition to being a powerful atmospheric pollutant, to the point that many local residents are forced to keep doors and windows of their residences closed. In buildings built in areas close to the piers, the situation is intolerable.

In response to a question from this reporter about difficulties faced by the crews of vessels in the bay in order to come ashore, Captain Marin, who also heads the Port Facilitation Committee, said that it has been agreed that captains of ships proceeding to La Guaira should send a telex communication to the effect that no contagious disease exists on board. This is accepted by the health department as "free international communication." The vessel

can then request that the inspection be made outside the bay, so that once this formality is completed, it may complete the remaining procedures permitting the crew to disembark. However, not all ships make use of such procedures and crew members must then remain on board as long as the vessel remains in the harbor.

Orinoco Cleanup Operation

Caracas EL NACIONAL in Spanish 27 Aug 77 p D7

[Text] Maturin, 26 Aug--The Ministry of Energy and Mines announced here today that it has authorized the construction of an oil removal plant at the shipping terminal of the Punta Cuchillo port on the Orinoco River.

The estimated investment exceeds 6 million bolivars and the project is aimed at removing oil from and treating the waters of the Orinoco.

Speaking about the project today, the assistant head of the Technical Office of Energy and Mining, Luis A. Gonzalez, said that the plant would provide a solution to the serious problem of the contamination of the waters of the Orinoco River.

He said that the oil tankers that arrive empty at the Roqueven terminal on the Orinoco customarily take on sea water as ballast and while at the shipping terminal, remove such ballast, thereby polluting the waters of the Orinoco due to the oil residue.

He also said that the plant would also protect the ocean water and eastern beaches from the polluting oil residues.

The ships leave through the Gulf of Paris and always leave behind trails of oil and spills.

Call for Ecological Consciousness

Caracas ULTIMAS NOTICIAS in Spanish 2 Sep 77 p 28

[Excerpts] An appeal for the conservation, defense and improvement of the environment, a task involving all of us, is made by the minister of environment and renewable natural resources, Arnoldo Jose Gabaldon, to the Venezuelan scientific and technological community in the second issue of the periodical CIENCIA Y TECNOLOGIA DE VENEZUELA.

This issue of the periodical, which is the technical organ of the National Council for Scientific and Technological Research (CONICIT), is devoted to ecology. Material contained in the issue includes the "Analytical Report on the Proposed Organic Law on the Environment," presented by the CONICIT Ecology Work Group to the Social Affairs Commission of the Senate Chamber.

The document states that "in Venezuela, the increasing deterioration of the environment presents particular characteristics. The imbalance existing in the country is so great that it produces extremely grave symptoms ranging from the deterioration of the so-called natural resources, the exhaustion of hydrographic basins, and so on, to the formation of an indigent society, uprooted from its environmental context, manifested in marginal communities and their aftereffects of ecological degradation, malnutrition, unemployment, crowding, the destruction and spoliation of ecosystems, betokening great and grave disturbances having complex effects, and abuses in the application of modern technology, abuses which have gone beyond the limits of tolerance of many subsystems in the ecosphere, exceeded their self-regulating capacities and caused damage of an irreversible nature."

National Guard Promises Enforcement

Caracas EL NACIONAL in Spanish 19 Jul 77 p D3

[Article by Salvador Perdomo]

[Excerpts] Gen Enerio Gonzalez Medicci, conservationist, naturalist and commanding officer of Regional Commando No 5, stated yesterday that one of the precise and decisive instructions which he had passed on to his aides, officers, noncommissioned officers and troops was to eradicate all influence trading, recommendations and maneuvering in the mission of conserving and protecting renewable natural resources.

"No matter where they come from," he said, "we shall not accept recommendations, based on a concrete fact which is that the Organic Law on the Environment does not allow exceptions. Anyone guilty of a violation must be severely punished. Minister Arnoldo Jose Gabaldon and his team have one standard dictated by the president of the republic and we shall follow it and do our duty to the letter. The Venezuela of today, tomorrow and always can no longer tolerate the deterioration of nature."

Gen Enerio Gonzalez Medicci made his announcement yesterday morning when participating in the closing ceremony of courses on the conservation and protection of natural resources, courses given for a contingent of noncommissioned officers and guardsmen at Detachment 56 of Regional Commando No 5 of Cotiza.

"This contingent of young men in course 02 is graduating with basic knowledge," he said. "These courses are being intensified through the Regional Commando No 5 by the General Command of the National Guard. With this new contingent, we are going to increase our services of vigilance, not only over the fauna and flora, but over our soil and waters, as part of the Organic Law on the Environment."

Phosphorus, Chlorine Insecticides Banned

Caracas EL NACIONAL in Spanish 7 Jul 77 p C14

[Text] The ministries of Environment, Health and Social Welfare and Agriculture and Livestock have jointly agreed to eliminate the use of phosphorated and chlorinated products in Venezuelan fields after having determined their inherent danger by means of analyses conducted by the Plant Health Directorate of the Ministry of Agriculture and Livestock.

Ministry officials stated that in view of the indiscriminate use of the agrochemical products, which affect the human organism and harm the environment, the Ministry of Agriculture has decided to regulate the use of the insecticides.

"For some time, organizations which bring together the country's farm producers -- specifically FEDEAGRO [National Federation of Agricultural Producers] -- have been asking the ministry to take action on the problem due to frequent poisonings of farmers," the ministry source stated.

The proposal of the rural producers was submitted for the consideration of the president of the republic at the last meeting of the tripartite commission from the farm sector. The latter set up a commission to take up the situation, made up of representatives from the Central University of Venezuela, the Ministry of Health and Social Welfare and the Ministry of Agriculture and Livestock, through the Plant Health Directorate.

Various investigations led to the conclusion to eliminate the chlorinated products. At the same time, a proposed resolution was drawn up prohibiting the use of organic chlorate insecticides, with the exception of those with less lethal power and which are still necessary since no substitutes are yet available.

The decision of the three ministries was based on recommendations from the special commission named by the president of the republic from within the tripartite commission of the farm sector.

Air Quality Monitoring Stations

Caracas EL NACIONAL in Spanish 19 Aug 77 p C6

[Report on interview with Genoveva de Genatios, head of Central University of Venezuela Air Laboratory, by Kalinina Ortega; date not given]

[Excerpts] Rene Dubos said that "man does not march toward his extinction. He can adapt to nearly any condition. That is the real tragedy: that we can adapt. And as we adapt, we accept ever worse conditions, without realizing that a child which is born and grows in such an environment has no possibility whatsoever of fully developing his physical and mental potential."

Genoveva de Genatios is head of the Air Laboratory of the Department of Sanitary Engineering of the School of Engineering of the Central University of Venezuela. With her I began a conversation on the Pan American Air Pollution Sampling System which the Central University of Venezuela has installed in various sites as part of its work in research into atmospheric contamination.

[Question] How many stations are there to measure air pollution?

[Answer] There are six: One is located at the Central University of Venezuela and it was put there in 1968. That same year, another was set up at the Francisco de Miranda Air Base. In 1971, one was set up at the Catholic University, another in 1972 at the Cajigal Observatory, another in 1973 at the Pastor Oropeza Pediatrics Institute and finally, another at the Ministry of Public Works Camp at Kilometer Marker 5 of the freeway, near Ojo de Agua.

[Question] What have been the results of the samples collected at each of the stations?

[Answer] The results show that the principle source of atmospheric pollution in our capital, the automobiles, produce a large share of the gases and particles which in certain areas and at certain hours of the day cause levels of pollution -- including noise -- to reach significant figures.

[Question] What about dust?

[Answer] With respect to dust in suspension, the level found is also relatively high. With respect to sulfur dioxide, the levels are low, which is understandable since most of the fuel used by vehicles and the fuel used in industry are substances with low sulfur contents and as a result, the amount of sulfur dioxide produced is very small.

[Question] How did the university begin to participate in this work?

[Answer] In 1967, the Central University of Venezuela signed an agreement in which the Ministry of Health and the Pan American Health Organization participated. The objective of the agreement was to set up and maintain air pollution sampling stations. Their tasks would be developed in coordination with and as part of the Latin American System of Normalized Air Pollution Sampling being established in this hemisphere.

The purpose of the program is to initiate the collection of data enabling participating countries to learn the characteristics of this problem which affects metropolitan areas ever more seriously and to determine the future trend of pollution levels so as to adopt measures necessary for its control in a timely fashion.

She explained to us that along with and for the purpose of learning the behavior of our atmosphere, studies were made for a limited time using the methods of the Panair system at other sites in the metropolitan area.

[Question] Did you measure other pollutants?

[Answer] We did so with other methods. We can sum them up as follows: the detection of the presence of carbon monoxide, using nondispersive infrared, for instantaneous and continuous measuring. We also measured carbon monoxide by the ampoule method. There were measurements of dust in suspension, using the high-volume sample method for periods of 24 hours, and measurements of sulfur dioxide, using the pararosaniline method in 24-hour samples and continuous measuring. We also measured nitrogen oxide, lead and corrosiveness.

[Question] Are there plans for expanding the system?

[Answer] In view of the importance which from the standpoint of atmospheric pollution certain zones of high population density or industrialization offer, there were attempts to extend studies similar to those of Caracas to those areas. As a result, in 1973, two stations were set up in Maracaibo in the Department of Sanitary Engineering of the University of Zulia and the other in the branch of the Canalization Institute. However, the operation of the stations did not have the required continuity.

She recalled that at the third meeting of ministers of health from the Americas, the following recommendations were included: "To formulate programs of atmospheric pollution control in urban areas with over 500,000 inhabitants and in other cities where industrialization and other special considerations justify such control."

[Question] What about Venezuela?

[Answer] Venezuela has poles of development that must be taken care of due to the problem of atmospheric pollution. These poles of development include, in addition to Caracas, Maracaibo, Valencia, Barquisimeto, Ciudad Guayana, Maracay, Barcelona and Puerto La Cruz.

Our country is part of the information of the World System of Air Quality Control. All of this is done through the research done at the Central University.

Lake Pollution Agreement Signed

Caracas EL NACIONAL in Spanish 22 Aug 77 p 2-11

[Text] An agreement for the completion of an overall study of the pollution of Valencia Lake was recently signed by the minister of environment and renewable natural resources, Arnoldo Jose Gabaldon, with the La Salle Foundation of Natural Sciences, represented by Hermano Gines.

In making the announcement, the general director of information and research of the ministry, engineer Luis Remiro Parra, said that the study is being undertaken for the purpose of controlling the contamination of that beautiful natural resources and its affluents.

"The study," explained Luis Remiro Parra, "will include the physical science of the lake, bathymetry, patterns of the circulation of the waters under the influence of the prevailing winds, temperature profiles and their seasonal variations, light penetration and geophysics."

The Ministry of Environment and Renewable Natural Resources has made an inventory of industries in the state of Aragua as part of its actions aimed at coordinating control of the pollution of the waters of this important area in the central region of the country and rational use of the lake.

"At the same time," the general director of information and research into the environment, "the overall study of pollution of the lake includes stabilization by 1980 of the growth of Valencia and Maracay at an optimum level of approximately 1 million inhabitants combined."

Such stabilization of growth offers the possibility of distributing 500,000 inhabitants among the other settlements in the Valencia Lake basin, according to the plan of territorial structuring unanimously approved by the seminar on problems concerning the utilization of soil and water resources held in June of this year in Maracay.

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USSR

IMPORTANCE OF ENVIRONMENTAL PROTECTION STRESSED

Riga KOMMUNIST SOVETSKOY LATVII in Russian No 5, May 77 pp 74-80

[Article by A. Ron: "National Environmental Protection--An Urgent Demand of Today"]

[Text] A socialist state, by its practices in managing its economy and by theoretical developments in the field of environmental protection, convincingly shows that the worsening of man's living space is not an unavoidable consequence and an inherent attribute of the economic and cultural activities of a modern highly-developed industrial society. This stands to reason providing that a society, in regulating and managing its own vital processes, constantly takes nature's objective laws into account and uses its natural resources prudently and in an economically sound manner.

In the Soviet Union and in other collaborating socialist countries the necessary socio-political prerequisites for efficient protection, responsible use and expanded regeneration of renewable natural resources have been made. Such prerequisites are: national ownership of the land, minerals, water and forests; planned management of the national economy and unified economic policies on all levels; a system of legislative acts covering state protection of the nation's natural resources; the presence of highly developed productive forces, in particular, providing the extractive branches of the economy with advanced technology; as well as a number of other prerequisites.

The important factor, contributing in every possible way to the confirmation of a real governmental regard for the natural environment, is Soviet legislation with its broad complex of standards for the protection of nature. Decisive measures, aimed at the organization of daily, comprehensive, and well-planned scientifically substantiated natural protection, were adopted by the young Soviet government quite soon after the Great October Revolution. In 1918 a decree was issued on forests and the RSFSR People's Commissariat of Education [Narkompros] established the State Committee for the Protection of Nature. Later decrees also were approved on the protection of natural relics, the establishment of preserves, hunting seasons, and others. Many legal acts of this type were developed on the initiative of V. I. Lenin. Thus, from the first years of Soviet authority the protection of nature was elevated in the

USSR to the rank of a state policy and became a national task. This task is being accomplished consistently and purposefully. This is attested to by the legal documents regulating man's interrelations with nature under conditions of a socialist state that have been approved.

The efficient use, preservation and regeneration of natural resources is a subject of constant concern of the Communist Party and the nation's government. In the CPSU program and in many party documents environmental protection is viewed as one of the most important tasks for the society building communism. At the 25th CPSU Congress great attention was devoted to this problem. It was noted, in particular, that the Soviet state, in the process of improving legislation, has given much attention to the development of legal regulation of environmental protection and in this area has adopted a number of statutes. "It is very well," said CC CPSU General Secretary L. I. Brezhnev in his fiscal report before the 25th Party Congress of the CC CPSU, "that now we have well-founded legal standards that allow for purposefully conducting work in the protection of nature."

The party and the state continually and purposefully establish these standards. In September, 1968 the USSR Council of Ministers adopted the decree "On Measures to Prevent Pollution of the Caspian Sea." In June, 1971 a decree of the CC CPSU and the USSR Council of Ministers was published "On Supplementary Measures to Guarantee the Efficient Utilization and Preservation of Natural Riches in the Lake Baykal Basin," in March, 1972 a decree was issued "On Measures to Prevent Pollution of the Volga and Ural River Basins by Impure Sewage Water," in January, 1976 there was the decree "On Measures to Prevent Pollution of the Black and Azov Sea Basins," and in July of that year a decree of the USSR Council of Ministers was issued "On Measures to Intensify Efforts to Protect the Basins of the Baltic Sea from Pollution."

In December, 1972 the CC CPSU and the USSR Council of Ministers approved the decree "On Intensification of the Protection of Nature and Improved Utilization of Natural Resources." In 1973 all union republics also approved decrees having the same title.

In every union republic laws on the protection of nature are in effect. This problem was also given much attention in "The Basic Trends in the Development of the USSR National Economy in 1976-1980."

Questions on the protection of nature and the efficient use of natural resources are of real significance to our republic, and for this purpose a number of measures are being realized. Land reclamation has been widely developed, the battle with soil erosion is being waged, large-scale hydroelectric stations have been built, river effluence is being regulated, measures are being taken to improve fishing and hunting and to restore forest land, gasification and district heating systems are being introduced in cities and industrial centers that substantially reduce air pollution, and at enterprises and in cities construction of facilities is being carried out for purification of sewage water and industrial discharges into the atmosphere.

The Supreme Soviet of the Latvian SSR adopted laws on protecting nature in the republic including the Land and Water Codes of the Latvian SSR, the Latvian SSR Mineral Resources Code, the Latvian SSR Health Maintenance Law. They establish favorable legal conditions for the most efficient and zealous use of available resources, and for intensification of the protection of nature.

The Latvian SSR State Planning Committee [Gosplan] developed a scientifically well-founded complex program for the protection of nature and efficient use of natural resources in the republic for 1976-1980. Participating in the creation of this program were the party committees, many republic ministries and departments, union-republic enterprises, rayon executive committees and the cities' councils of workers' deputies. Its accomplishment during the 10th Five-Year Plan will become a new stage in natural protection work.

Since 1974 the long-range and annual national economic development plans of the republic include the section "The Protection of Nature and the Efficient Utilization of Natural Resources," a plan which is comprised in accordance with directional documents of the party and state on environmental protection taking into account the complex program approved by the USSR Council of Ministers' State Committee on Science Technology for scientific and technological progress and its social consequences in the field of natural utilization.

And so the republic now has a clear-cut system of standardized acts and decrees from the state organs on the protection of nature and its use. However, their effectiveness does not depend only on the industriousness and persistence of protective legal institutions. In a socialist society where the workers directly participate in managing governmental affairs, the realization of fundamental legal standards are also accomplished by the workers themselves. This is done via the soviets and their permanent commissions on the protection of nature on which hundreds of deputies work and through rayon departments and primary organizations of the republic's Society for the Protection of Nature and Natural Relics, as well as through numerous independent action workers' organizations. Outstanding participation in the matter of environmental protection and in propagandizing legal knowledge about nature is being done by the collectives of general instruction schools as well as by teachers and students of intermediate special schools and higher institutes of learning. The party organizations coordinate and direct the efforts of this large group of active members and manage its activities. Working successfully in this regard are the Riga, Daugavpils, and Rezekne city committees and the Latvian Communist Party rayon committees in Riga, Daugavpils, Talsy, Tukums and elsewhere.

It is worth noting that the state organs and the republic's social organizations in carrying out the decree of the Latvian CC CP and the Latvian Council of Ministers dated 10 April 1973 "On Intensification of the Protection of Nature and Improved Utilization of Natural Resources," also began to devote much attention to explaining the existing legislation to workers at industrial collectives both according to place of residence and for conducting measures aimed at strengthening mass consciousness towards a prudent and economically well-founded regard for the republic's natural resources.

Specific work in this field is being done by educational, cultural and health organs, by trade unions, and by Komsomol and other social organizations. The republic's society Znaniye, prepared and published a systematic handbook on the legal problems of the protection of nature. Action is being taken in giving publicity to this problem in lectures that explain legislation on the protection of nature. The subject matter of the lectures is expanding. Positive experience in this matter has been accumulated in the Leninskiy and Leningradskiy regions of Riga and in the republic's Aluksne, Kraslava, Ogre and Riga rayons.

The national universities and their corresponding departments are making their own contribution in making the public aware of the legalities involved in environmental protection. In the 1974-1975 school year there were 26 departments for the protection of nature with 1,800 students at the republic's national universities. Branches of these departments have been set up in a number of the republic's rayons. For example, in the Bauskiy Rayon they are functioning at the Saulaynskiy State Farm Technical School attached to the Iyetsavskiy Palace of Culture. Various questions on the legal protection of nature have been included in the programs of all departments of the national universities of legal knowledge. Lectures on these subjects are given by jurists, party apparatus workers, soviet and economic organs, and by managers of enterprises, sovkhoses and kolkhoses.

Republic and zonal seminars are regularly conducted on problems of environmental protection. There are scientific and practical conferences, contests and other measures. And so, in the Stuchinskiy Rayon a scientific and practical conference took place on the theme "Legal Foundations for the Protection of Nature." The materials and conclusions were then used in other rayons of the republic.

Various legal themes aimed at the protection of nature have been included in the programs of the educational institutions. Diverse out of class work is being done with the young students. And so, in all schools in the Gulbenskiy Rayon a contest, "Man, Nature and the Law," was held which helped the youngsters look at the world with different eyes, to look over their relationship with nature, to look at it from the point of view of consumers, and from the position of future masters of their own country and all of its riches.

At the same time, in the work aimed at the protection of nature and for instilling in the citizens a prudent and careful regard for the use of natural riches, there are substantial shortcomings. Not only a significant portion of the population but even many economic managers and social activists are poorly informed about prevailing legislation in the field of the protection of nature. As a result decisions of the judicial and administrative organs carried out when the rules governing the protection of nature have been violated are not always timely and are not carried out with the proper responsibility. The attention of the corresponding labor collectives and the public is not being directed at these facts and this adversely affects educating citizens to respect the law. For this very reason--lack of legal information--

the use of legal measures and powers directed at the protection of nature and natural riches are used quite insufficiently by the local soviets. It is all too rare that questions linked with environmental protection come up for discussion at party and workers' meetings of the collectives at major industrial enterprises. And here is just where there must be education on the implacability towards air and water pollution. Here in the local collectives, the workers' initiative must flourish aimed at improving techniques and technology, the working out of technological cycles to provide full preservation of our living environment, and not only at lowering, but completely eliminating the harmful effects of large-scale industrial production.

The organization involved in making legal knowledge and legislative standards in the field of environmental protection known to the public leaves much to be desired in a number of cities and rayons. For example, departments for the protection of nature have not been set up at the national universities in the city of Rezekne, in the Gulbenskiy Rayon and in a number of other rayons in the republic. Many lectures and discussions which take place at labor collectives are of an especially enlightening character but do not point the listeners towards the decisive struggle with the development of a wasteful and extravagant regard for natural riches and for unconditional adherence to existing legislation.

Greater attention must be given to publicizing legal questions on the protection of nature using mass information means. Critical material concerning the facts of gross violations of environmental protection laws appear in the press practically only when nature has already undergone substantial damage. And articles and correspondence aimed at preventing actions against society that harm flora and fauna are published all too rarely.

Much greater attention should be given to explaining existing environmental protection legislation to economic workers. Here the need is critical. At the same time even at the Interbranch Institute for Raising Qualifications for Latvian SSR National Economic Specialists the department of management which improves the qualifications for enterprise directors, their deputies and chief specialists, in only nine groups of 98 is there examination of questions on the legal protection of nature and natural riches, and this is only for 4-6 hours. Educating responsibility for personal participation in environmental protection just among the commanders of industry is now an especially important and urgent task before the government requiring daily attention.

Nature has been generous in presenting the Latvian territory with bodies of water--more than 3,000 lakes, and rivers, including the very smallest, number more than 11,000. During the years of Soviet rule many new man-made reservoirs have been set up in the republic and there has been a significant increase in the number of fish ponds. To safeguard and multiply that which has been created by nature and man's labor--this is our duty. Disrespect of environmental protection laws among economic managers is fraught with far reaching consequences not only for the present but even more so for future

generations. But, unfortunately, examples of wasteful, almost criminal regard for natural resources in the republics are not all that rare. Serious violations of the Water and Land Codes, and the Latvian SSR Mineral Resources Code are taking place. Operational projects expand lacking agreement with water inspection organs. Illegal dumping of polluted water and petroleum products into bodies of water is tolerated. The available sewage treatment plants are operated poorly by enterprises of the Ministry of the Food Industry of the Latvian SSR and the republic's Ministry of Meat and Dairy Industry. Making the same mistakes as well are several enterprises of the republic's Ministry of Building Materials Industry, the chief petroleum and fuel marketing and supply administration Glavneftetopsnabsbyt of the Latvian SSR Council of Ministers, the Riga diesel engine plant and the paint and varnish plant, the Riga Oil Refinery, plants in the industrial center in Olayne and a number of others. The measures needed to protect the air from contamination year after year are not being carried out by enterprises of the Latvian Ministry of Industrial Building Materials. At the Brotseny Cement and Slate Combine, for example, three ovens work without dust trapping devices. They discharge an enormous amount of dust into the atmosphere. Many kolkhozes and sovkhoses lacking the approval of water inspection organs situated warehouses containing petroleum products, ammonium hydroxide, and toxic chemicals right next to rivers and lakes.

The protection and regeneration of forest lands in the republic is becoming a matter of public concern. Such party committees as those in Ventspils, Talsy, Yekabpils, Aluksne, Madona and several others at sessions of the bureau are systematically examining questions concerning matters at local lumber industry enterprises and persistently strive for what has been outlined for the efficient use and regeneration of timber resources. But, unfortunately, these questions still do not get the attention they need everywhere.

A special role in environmental protection work belongs to the local ruling organs--to the soviets that have been called forth to show constant concern for the conservation of nature. For this purpose they have sufficient laws. In necessary instances they can abolish decisions on managing kolkhozes and other cooperatives that are in conflict with established standards, and suspend decisions and regulations of the administrations of industrial enterprises situated on land within the jurisdiction of the soviets that harm nature. They are the chief organizers for work on law observance in their own territory, they control the fulfillment of established rules by all officials and citizens. They have the right to hold responsible those who damage nature by their own actions.

Local soviets must more actively educate the people, more actively explain to people that nature is far from an "external storehouse" from which it is possible to ladle out endlessly, without giving something in return. We must evaluate our actions taking into account not only today's consequences, but the far off consequences on the environment also. Due to ignorance or indifference, negligence or irresponsibility we are able to find the reasons for not making up for damages to nature--to the natural foundation for developing the national economy, for raising material prosperity--damage to

the source of courage and man's health. The national concern about the protection of nature and the multiplication of its riches is an urgent requirement of today. This is something that the deputies and workers of the executive committees of the local soviets must remember.

A very important form of work of the local soviets on environmental protection is coordinating the activities of specialized organs and organizations that have been summoned to exercise control over the realization of natural protection legislation. These are the departments of the Hunting and Fishing Society, the Society to Protect Nature and Monuments, and state inspection organs. The local soviets as fully empowered organs of state authority were called upon to consolidate their efforts with the aim of protecting the natural environment.

The recently convened Sixth Congress of the Society for the Protection of Nature and Monuments of the Latvian SSR discussed the most important questions of their activities and approved a decree that specified the tasks, the solution of which will be a new important stage in environmental protection and improved use of natural resources. The society consolidated about 120,000 people in its own ranks. In recent years under the management of and with the direct support of party and soviet organs the society was firmly established in an organizational sense and now makes a valuable contribution in conserving the republic's natural riches. It is necessary to take care to see that the efficient activities of the society continually grow.

Under conditions in which diverse natural resources become more and more involved in man's aggressive activities and the production processes more closely interact with the natural environment, the search for optimal alternatives for man's interactions with nature takes on even greater importance. The republic actively carries out measures on protecting the air and water basins from being polluted by substances contained in industrial discards harmful to man and the environment. A broad complex of regeneration of nature measures are being carried out in the republic including land recultivation, renewal of forest resources and improvement of their health status. Even this simple overview of what has been undertaken just in our republic in the interests of protecting nature and multiplying its riches provides a sufficiently clear presentation of the state's great concern which the party and the government display for preserving the natural environment inhabited by man.

Nationwide concern for the protection of nature and the multiplication of its riches are the urgent demands of the day. Our task, as stated by General Secretary of the CC CPSU, L. I. Brezhnev, at the 25th Party Congress is "... to ennoble nature, to help nature more fully cover itself with life-giving forces."

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NEW GAS PURIFICATION, DUST REMOVAL UNIT DISCUSSED

Moscow GUDOK in Russian 6 Sep 77 p 3

[Article by V. Dimitrov, correspondent, Baku: "The Scientists Helped"]

[Text] The workers at the Baku Railroad Car Repair Plant imeni Oktyabr'skaya Revolyutsiya are in a very good mood. Since the beginning of the year their output has been more than 150,000 rubles above quota. However, there is yet another reason for their good mood: the installation of an experimental gas purification and dust removal unit on one of the enterprise's cupola furnaces has been completed, and its first tests yielded encouraging results.

The problem of fighting air pollution caused by the waste products of casting production has been bothering the Baku railroad car repairers for a long time. Using existing methods, they have achieved a certain amount of success in preventing discharges of large fractions into the atmosphere, but they have not been able to control the discharges of gas and fine dust.

"So, we decided to ask the scientists at the Azerbaydzhan Institute of Petroleum and Chemistry imeni M. Azizbekov for help," says I. Dodel'zon, the plant's chief engineer. "They responded to our request with a great deal of understanding, since they are also concerned with the problem of keeping the air pure, a problem that is mentioned in the draft for the new USSR Constitution."

The project was directed by Professor T. Alkhazov, doctor of chemical sciences. Supervision over the realization of this assignment was entrusted to candidate of chemical sciences Yu. Nadzhafov. A special laboratory was set up at the plant. Senior Engineer G. Skrinnik occupied himself with designing the installation, drawing up the engineering plan, and -- later --

supervising the actual construction. Chemical engineer A. Babayeva made a number of analyses of the gas discharge into the air by the cupola furnaces. The institute's specialists were assisted in every way possible by Plant Director A. Khalto, Chief Engineer I. Dodel'zon, Chief Mechanic K. Aliyev, the head of the plant's laboratory, G. Rubizova, and many others. The necessary equipment was manufactured in the plant's shops.

The collaboration between the production workers and the scientists was a very fruitful one: the stack of one of the cupola furnaces was topped with a design that had "begun life" as several different devices.

"Would you like to take a closer look at it?" asks G. Skrinnik and, without waiting for an answer, agilely scales a vertical ladder to a platform and raises the metal hatch under which the catalyzer is located.

"Here," explains the designer, pointing to the slanting sides of the spark arrester, "is where the large fractions carried out of the furnace by the gas are trapped. Organic impurities in the gas are neutralized on the catalyzer. At the same time, sulfur dioxide is converted into sulfur trioxide and a weak acid solution is formed during the subsequent cleaning stages. Together with the finest dust particles it flows through pipes into a hopper where the sludge settles, after which the clarified solution can be used again. Incidentally, after a certain number of cycles this solution will be used for other production needs."

We climb down. Everything is ready for the testing of the unit. The coke in the furnace is fired. Everyone looks up, but they see none of the usual brown smoke that is the plant's "calling card" and indicates that metal is being melted in the stack.

"This is only the first stage of our work," concludes Yu. Nadzhafov. "Now we begin new studies, eliminate the defects, and make adjustments -- in a word, we will bring our experimental unit 'up to snuff,' as they say, and then begin to use analogous dust removal and gas purification units at other enterprises in this and other republics. We are proud to be making our own contribution toward the achievement of the goal formulated in Article 18 of the draft of our country's new constitution."

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STRICT MEASURES TAKEN TO PROTECT LAKE BAYKAL

Moscow VODNIY TRANSPORT in Russian 16 Aug 77 p 2

[Article by O. Kolbasov, doctor of legal sciences, chief of the Environmental Protection Section, Institute of Government and Law of the USSR Academy of Sciences: "We Are Protecting Baykal"]

[Text] In the draft for the new USSR Constitution, a great deal of attention is given to the interrelationship between man and nature. "In the USSR the necessary measures are being instituted," it says in the draft for our country's new primary law, "to insure the reproduction of natural riches and improve man's environment." How is this article of the Constitution being translated into reality? It can be seen best of all in the example of Lake Baykal.

Lake Baykal is unique. It is 636 kilometers long, has an average width of 48 kilometers, and has a maximum depth of more than 1,600 meters. Baykal is fed by 336 rivers and streams and is the source of the Angara River. It contains about one-fifth of the world's reserve of fresh surface water and more than 80 percent of our country's fresh water reserves. The water in the lake is exceptionally pure and is rich in oxygen. About 700 species of plants and more than 1,300 species of animals, two-thirds of which are found nowhere else in the world, live in and around Lake Baykal.

Up until now, Baykal has been a natural mystery. On its bottom there is an anomalously intensive influx of deep heat from the interior of the Earth. In connection with this, the water in the bottom layers is noticeably warmer than it should be. Along its coast there are many heat sources where the water temperature is 36-70° and higher. As far as the number of sunny days is concerned, many areas of Lake Baykal are competitive with the popular Black Sea resorts.

The Communist Party and the Soviet government, along with our country's scientists, are naturally devoting a great deal of attention to the problems of the rational use and conservation of this marvelous basin's natural resources.

The question of protecting the Baykal region -- primarily the lake itself -- became particularly acute in the middle of the 1950's, in connection with the construction of the Irkutskaya GES and the Baykal'sk pulp and Selenginsk cardboard combines. Scientists were disturbed by the threat of pollution of the lake's waters and other negative consequences. Therefore, the strictest possible measures were adopted to prevent the pollution of Lake Baykal.

The conservation and rational utilization of the Baykal basin's natural resources is insured by all legal acts of the state, including the basic land and water legislation, legislation on underground resources and public health, and the resolution adopted by the CC CPSU and USSR Council of Ministers on 29 December 1972 that was entitled "On Strengthening the Conservation of Nature and Improving the Utilization of Natural Resources." These general legal requirements are being realized with the help of a whole system of special decisions and legal acts from the USSR, the RSFSR, and ministries and departments.

The most important measures were adopted in accordance with the RSFSR Council of Ministers' resolution "On Preserving and Utilizing the Natural Resources in the Lake Baykal Basin," which was passed on 9 May 1960. First of all, the size of the Barguzinskiy Preserve was enlarged and a significant part of the forests around the lake were transferred into Group 1, which means a strict conservation regime. Supervision over fishing and hunting was strengthened, and special attention was given to the implementation of conservation measures in plants that were being built.

In January 1969, the USSR Council of Ministers passed a new resolution: "On Measures for the Preservation and Rational Utilization of Natural Complexes in the Lake Baykal Basin." This document established a water-conservation zone for the lake inside its entire watershed area and imposed special conditions on the use of the natural resources in the area. It provided for even stricter regulation of timber cutting and pulp purchasing, as well as timber-rafting. In 1969, the Ministry of the Pulp and Paper Industry was ordered to finish the construction of the complex of purification plants and shops for the utilization of production byproducts at the Baykal'sk pulp plant.

The RSFSR Council of Ministers is prohibited from allocating land tracts for the construction of enterprises and other

projects in the Baykal basin if this could lead to disruption of the established regime for the conservation and use of its natural resources.

Considering the great national economic value of the lake's natural riches, the Soviet government has instituted a number of additional legal measures to protect this area. It was suggested to the ministries and departments that deal with the use of the Baykal basin's natural wealth, together with the USSR Academy of Sciences, accelerate the development of their projects for organizing the water-conservation zone and rules for protecting the lake's waters and natural resources, as well as projects for implementing land and forest improvement, agro-technical, and hydraulic engineering measures, including measures for protecting the soil from wind and water erosion. The CC CPSU and USSR Council of Ministers ordered the Ministry of the Timber and Wood Processing Industry to cease bank-to-bank timber-rafting on rivers flowing into Lake Baykal and to make sure that the channels of rivers in its basin have any sunken wood removed.

In accordance with this, the USSR Ministry of Land Reclamation and Water Resources developed and approved the "Temporary Rules for Preserving Lake Baykal and the Natural Resources in Its Basin." In particular, they specify that all enterprises and sewage systems be equipped with reliable purification plants. They also prohibit the further development of production facilities that produce especially harmful discharges that are difficult to treat; this applies mainly to the chemical and pulp-paper industries. No enterprises can be sited in the basin unless their drainage purification techniques and facilities have been approved under production conditions.

The regulations also prohibit the use of explosives in natural water areas and river beds and along their shores. The cutting of timber in areas where the trees perform a soil-protection or water-conservation function is strictly prohibited. Tourism and vacationing are allowed in the water-conservation zone of the Baykal basin only when they are properly organized.

What has been the result of all these measures?

Bank-to-bank rafting of timber has been halted on all the rivers in the basin and all sunken wood has been removed from them. The complete cutting of all timber has been halted on mountain slopes steeper than 15°. Several fish hatcheries have been built. Fishing and hunting are strictly controlled.

Lake Baykal and the territories adjacent to it are not only of all-union, but also of worldwide, value. To preserve them in

their primeval beauty, while using their riches for the national economy at the same time, is how the Soviet people understand the goal of their work for both today and the future.

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PROTECTING THE VOLGA RIVER

Moscow TRUD in Russian 6 Sep 77 p 2

[Article by S. Krylov, secretary, Volgogradskiy Obkom, CPSU, Volgograd: "The Nation's Azure Highway"]

[Text] The Volga is called our country's main "azure road." Its waters flow for more than 3,500 kilometers before they reach the gray Caspian Sea.

This great Russian river and its tributaries play an important role in the life of a huge, highly developed economic region. One-fourth of the Soviet Union's population lives in the Volga basin. Here there are more than 500 cities and about 5,000 industrial enterprises. Right now, when our country is preparing to celebrate the 60th anniversary of the Great October Revolution, we involuntarily turn to the past in order to evaluate the present properly: a period of gigantic, creative, transforming activity on the part of the Soviet people and the Leninist Communist Party.

Volgograd can serve as an example of this rapid development. Before the revolution, here on the banks of the Volga we had not only solidly settled large Russian manufacturers, but also French, Belgian, Swedish, and other companies. These industrialists were attracted by the cheap work force, excellent lines of communication, and abundance of water. The enterprises were built as close to the water as possible, while the working people's homes were pushed back into the ravines or onto the steppe, where they were slashed by burning winds. The capitalists took everything they could from the Volga without returning anything to it except huge amounts of poisoned industrial wastes.

The attitude toward Mother Volga changed with the establishment of the Soviet regime. The party and government adopted a solicitous attitude toward the riches of our country.

An example of this concern about the Volga is a decree of the CC CPSU and USSR Council of Ministers that was issued on 13 March 1972. An exhaustive program to insure the purity of the Volga's waters is outlined in this document. In particular, it specifies that in our heroic city the discharge of unpurified industrial and municipal waste water into the Volga will cease. For this goal alone, 150 million rubles were allocated.

Following the instructions of the party and the government, we in Volgogradskaya Oblast have instituted a firm order: no new enterprise can begin operating without an efficient complex of purification structures. At the present time, existing or re-organized plants and factories and the public utilities are also obligated to discharge only purified water into the river.

We are approaching the 60th anniversary of the Great October Revolution with the first encouraging results of this program. In the northern part of this city that now stretches for almost 80 kilometers, a new sewage system is in operation. It collects municipal and domestic waste water and carries it to the sewage farm on Golodnyy Island. After being purified there, the normal, pure water is returned to the Volga. The construction of the same type of sewage system for the rest of Volgograd is almost finished.

The purification of industrial and municipal waste water is a scientific and engineering program that requires considerable expenditures. When developing purification structures it is necessary to begin with local conditions, carefully consider all the possibilities and alternatives so as not to make any errors, and choose the system that will produce the best results. In this respect, the city of Volzhskiy can serve as an example. Hydraulic engineering, a large chemical and petrochemical industry, a pipe plant, enterprises belonging to the abrasives, machine building, and construction industries -- this is far from being a complete list of the industries located there.

Initially, the plan called for the discharge of industrial and domestic waste water into the Akhtuba, a branch of the Volga. This proposal was decisively rejected. The waters of the Akhtuba are the natural spawning grounds of the valuable sturgeon family of fish. To the planners' credit, they treated the customer's requirements in a businesslike manner. After searching diligently, the collective of Vodokanalproyekt [State Planning Institute for the Surveying and Planning of Outdoor Water Supply, Sewer Systems and Hydraulic Engineering Structures] in Rostov, which was assigned to carry the project through to completion, found a new and original alternative solution that

took care of the problem that faced them -- and not one cubic meter of sewage was discharged into the river! How well the collective handled this project is eloquently indicated by the fact that their efforts were rewarded with a gold medal at the Exhibition of Achievements of the National Economy of the USSR. Their success was shared by the operators of a nitric acid plant, who were awarded the silver medal.

All of Volzhskiy's polluted water is now fed through a system of conduits into pumping stations, which transfer it to purification structures.

The solution of this one problem engendered another one that was no less acute. The purification structures occupied thousands of hectares that were formerly hay fields. How were these deficiencies to be made up, and what was to be done with the purified drainage water?

The answer to these questions came during the second half of the project. Next to the purification systems, 6,000 hectares of arid land was set aside for the residential and production buildings and schools of a new sovkhoz named Khimik. Every year this sovkhoz uses 30 million cubic meters of purified waste water to irrigate its fields.

Thus, today the city of Volzhskiy does not discharge a single cubic meter of waste water into the river. If we consider the result of the extensive use of circulating-water systems, the city saves about 50 million cubic meters of Volga water every year. It should also be mentioned that after additional natural purification in evaporation ponds, about half of the purified waste water is returned to the city's enterprises to maintain the level of their circulating-water systems.

The experience in solving the extremely important problem of protecting the Volga against waste water that has been accumulated by Volgograd's enterprises and city management is no less instructive. In the southern part of the city, where many new plants have been built in the last 20 years, a complex of purification structures has appeared at the same time. They serve enterprises belonging to eight ministries and departments, as well as three city rayons.

A characteristic feature of this construction is that the waste water from some plants is used for the technological needs of neighboring ones. It is easy to see that this causes a noticeable reduction in the amount of industrial waste water that must undergo biological purification. For example, the drainage from a steel wire and cable plant, which contains a high

percentage of mineral salts, is piped to the Svetloyarskiy Albumin-Vitamin Concentrate Plant. Here it has a beneficial effect on the production of high-quality yeasts that are used as fodder additives. Such combinations of the efforts of several enterprises in order to create unified, integrated water purification systems, plus the concentration of financial and material resources and the joint search for and introduction of the newest scientific achievements and engineering solutions for maintaining the purity of the Volga's water, have saved the national economy tens of millions of rubles.

In earlier times, the many boats that sailed the Volga inflicted great damage to the purity of its water. Thousands of ships travel along this azure road. They carry grain, salt, timber, construction materials, and thousands of tons of different products. It was necessary to institute stringent measures so that these ships do not pollute the river. All of them have now stopped discharging contaminated water into the Volga, and stations where waste water can be dumped and purified are used.

The citizens of Volgograd understand that the preservation of nature and the environment requires a unified complex of measures. It includes the reinforcement of river banks, the prevention of landslides, and the replenishment of fish. Hatcheries have been built to grow young fish -- the valuable sturgeon, in particular. New types of fish that were previously not seen here are being introduced.

When one tries to grasp the meaning of the draft of the new constitution and becomes familiar with the materials from the regular session of the USSR Supreme Soviet, then one begins to understand what a huge place nature and its riches occupies in our lives. And we must do everything we can to see that they are consumed economically and that they are protected and helped to increase.

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CLEANING UP THE DNEPR RIVER

Kiev PRAVDA UKRAINY in Russian 3 Aug 77 p 3

[Article by V. Nikipelov: "River Sanitation -- There Is Such a Service"]

[Text] As the old saying goes, one rotten apple can ruin a whole barrel of them. A few drops of gasoline is all it takes to make dozens of liters of water unfit to drink. And how many of these "drops" of petroleum products fall into our navigable rivers, including the Dnepr -- the main water artery of the Ukraine? Its glassy surface is crisscrossed by hundreds of ships and tens of thousands of motorboats, and many of them leave iridescent oily tracks behind themselves. Particularly heavy concentrations of boats are found in the river ports and harbors. What can be done to remove these petroleum "stains" from the water around Kiev?

"On every vessel, from the very smallest boat to the very largest steamship," says Mikhail Sergeyevich Semenets, chief of the Kiev river port, "there are special sealed compartments into which all contaminated petroleum products, so-called podslanevaya [translation unknown] water, used oil, and other wastes are poured. When a large enough quantity of these wastes has accumulated, a ship is visited by the OS-1, a special ship that acts as a cleaning station. It collects all the wastes and delivers them to a biological purification station. Here the polluted water is cleaned and returned to the river, while the petroleum products that have been separated from it are sent to be reprocessed for secondary use."

On a small launch, I go to the biological cleaning station with V.N. Shekula, senior controller of the integrated fleet maintenance section.

The water that is received for purification is put into special reservoirs, where it sits for 18-24 hours. During the time, the oil that it contains gradually rises to the top. Special

devices collect it and transfer it into a separate holding area, from which it is then sent to a processing plant.

The water that has completed the first stage of the purification process is pumped into aeration tanks. They contain an active slurry teeming with bacteria that eat petroleum products. These invisible sanitation workers "fall to" and consume the fuel oil, solar oil, and kerosene remaining in the water.

After a few hours of this biological processing, the completely purified water is pumped into a settling tank for the final stage of its treatment. Then, after laboratory analysis, it is poured into the Dnepr. Although a liter of water contains 60-80 milligrams of petroleum products before cleaning, afterward it has only half a milligram, which is one-fifth of the allowable norm.

This is the first time that such an installation for the biological purification of water contaminated by petroleum products has been used for river transport in our country. Specialists working at the port built the experimental-industrial prototype in close collaboration with scientists from the Kiev Technological Institute of the Food Industry, who were led by Professor G.A. Nikitin. Its productivity rate is 60 cubic meters of water per day. In 1976, 7,160 tons of podslanevaya water were cleaned in this installation and 200 tons of petroleum products were sent to the petroleum distillation plant.

"And in the future," mentions M.S. Semenets, "we have plans for building permanent moorings equipped with biological cleaning stations. Eventually, the first oil-collecting ship will appear on the Dnepr. It will gather up oil spills directly from the river's surface. It is not only the commercial ships that are responsible for these spills. In the Kiev area, for example, there are about 20,000 private boats. Their total power exceeds that of all the ships in the Kiev river fleet. The owners of the small boats frequently pour used oil products directly into the river. This is an extremely serious problem, and in relation to it we must heed the weighty utterances of the Kiev Gorispolkom: Our Dnepr must always remain clean!"

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PROTECTING THE CASPIAN SEA

Moscow EKONOMICHESKAYA GAZETA in Russian No 36, Sep 77 p 13

[Article by M. Dobrorodnykh, chief, Turkmen Basin Administration for Regulating Water Use and Conservation, Krasnovodsk, Turkmen SSR: "The Caspian Must Remain Clean"]

[Text] Concern over measures to prevent the pollution of the Caspian Sea has become an integral part of the everyday activities of party, council, and economic agencies in Krasnovodskaya Oblast. Much attention was devoted to this important problem at a recent session of the Oblast Council of Workers' Deputies.

It is only in the last two years that stations have been built to receive and clean ballast water discharged by tankers at moorings at the Krasnovodsk pipeline transfer point and the ports of Aladzha and Okarem. Their operation has already made it possible to not only achieve a considerable reduction in the discharge of oil-contaminated water into the sea, but also to collect a large amount of oil products that can be reused. Citywide purification plants are operating in the oblast center, as well as at the TETs imeni 50-letiya Oktyabrya, the petroleum processing plant, the railroad yards, and the meat and fish combines. Much has been done to prevent pollution of the sea by ships belonging to the Caspian Steamship Line and the Eastern Regional Administration of the Oil Fleet. Attention has been focused on the mandatory collection and utilization of used petroleum products and the maintenance of water purity in the ports.

However, we cannot flatter ourselves with the thought that everything has been done to preserve the Caspian. The fact of the matter is that the rates of industrial and residential construction are still ahead of the rate at which purification plants are being built. This applies most of all to the city of Cheleken and the settlement of Bekdash. As a rule, the time norms for the construction of purification plants and sewage systems have been violated in these places. For instance, the neutralization station at the Cheleken Chemical Plant was

to have been in operation in 1972. The reason for the extended delay in the completion of this water-conservation project is that the plans were faulty. The plant's and Soyuzydobrom's leaders acted irresponsibly in appraising the plan and supervising the construction.

For this same enterprise, a sewage conduit and a pumping station (with a planned capacity of 65,000 cubic meters a day) for discharging neutralized drainage water into the desert section of the Cheleken peninsula is being built. Again, it was to have been completed long ago. The primary loss is an economic one, because our administration has forbidden the operation of the installations for the production of iodoform and potassium iodide. Since their completion, the plant has lost hundreds of thousands of rubles by not being able to use them.

Construction of yet another water-conservation project -- city purification plants -- is also going slowly in Cheleken. The plans for them, which were drawn up by Turkmenkommunproyekt, were found to contain numerous errors and omissions that, of course, had to be corrected. The customer, the Turkmenneft' production association, must also bear a large part of the blame because of its untimely solution of organizational problems and poor financing of this "nonproductive" project.

The Marine Exploratory Drilling Administration cares little about environmental conservation. Three years ago it was to have fitted all its marine drilling rigs and moorings with facilities for localizing discharges, in the form of boom enclosures and oil waste collectors. However, these measures still have not been fully implemented.

Much still remains to be done by the Krasnovodsk oil refiners. Construction of a circulating water-supply system has been under way for a year. It would make it possible to completely eliminate the contamination of drainage water by oil products and reduce by a considerable percentage the consumption of sea and reclaimed fresh water (in short supply in Krasnovodsk) for technological needs. However, the completion of this project is not yet in sight.

"Comrades, we can and must improve nature and help it to reveal its vital forces more completely," said Comrade L.I. Brezhnev in his Accountability Report to the 25th CPSU Congress. I would again like to bring those words to the attention of those managers who, in the press of everyday business, are paying poor attention to questions of environmental preservation. Expenditures to prevent the pollution of the Caspian Sea will be repaid a hundredfold.

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SWITZERLAND

DIFFICULTIES IN ENFORCING ENVIRONMENTAL MEASURES ON CARTELS EXAMINED

Zurich NEUE ZUERCHER ZEITUNG in German 4/5 Sep 77 pp 9, 10

[Article by Dr Hugo Sieber: "Environmental Protection and Cartel Law"]

[Text] As is well known, some environmental protection measures are not neutral in their effect on competition, but in various degrees affect the position of competitors in domestic or foreign markets. This is true both of government intervention and of provisions taken by the individual company, either alone or in cooperation with its competitors. It may therefore be expected that the Swiss cartel privilege, in regard to the legislative implementation of the constitutional article on environmental protection, will be used in connection with problems of this kind. Since this has hardly been the case as yet and was also not foreseeable in establishing the cartel law, an explanation should first be provided concerning the ways in which such connections are conceivable and what questions could arise in that respect.

Intervention Possibilities

In principle, a connection between the cartel law and environmental protection is essentially possible on three occasions. The first and probably most important occasion results from article 19, according to which cartel commission must adhere to federal laws and ordinances limiting freedom of competition. The commission is also authorized to submit to recommendations from the Federal Council concerning competition policy. In this instance, the government is the addressee of all competition policy objections or recommendations related to its legislation and measures in the area of environmental protection.

A second possibility results when a civil code judge has to examine, on the basis of articles 4 and 5, the matter of whether or not the basically inadmissible exclusion or considerable prevention of third parties from competition is justified by preponderant protection-worthy interests and therefore can be considered admissible. A connection with environmental protection exists in this instance, therefore, when the exclusion or considerable prevention of cartels or similar organizations from

competition is based on environmental protection motives and when the court must therefore make a decision in lawsuits as to whether these motives can qualify as protection-worthy. Such judgments are addressed to a cartel or cartel-type organization, on one hand, and the outsider plaintiff on the other.

The third possibility of a connection with environmental protection derives from article 20, according to which the cartel commission can submit recommendations, on the basis of a special study, aimed at lifting or amending economically or socially harmful regulations or provisions. If these recommendations are rejected, the Federal Ministry for Economic Affairs can file a suit with the Federal Supreme Court within a year. The connection with environmental protection in this instance exists, therefore, when the cartel or similar organization is affected by environmental protection measures or when they produce effects that are detrimental to environmental policy. The commission's recommendations and the court's decision are addressed to the cartel or similar organization.

Finally, it is also possible, in principle, for civil code lawsuits between cartel members, according to articles 11 to 16, to concern cartel regulations related to environmental protection. For the sake of completeness, therefore, without going into this matter in any great detail, this possible connection between environmental protection and cartel law must also be mentioned.

Cartel Commission's Right to Information

As already noted, most connections as well as most problems could derive from such notices and recommendations. It can emphatically be asserted that the cartel commission's legal right to express its opinion on federal laws and ordinances is also entirely upheld in the area of environmental protection. For far more government environmental protection measures than would normally be assumed are relevant to competition policy. The existence of this relevance, therefore, must be examined by the cartel commission and not merely by the federal agencies responsible for environmental protection measures. This means that all drafts of laws and ordinances in this area must be presented to the commission and not just those which the technical authorities of environmental protection themselves consider relevant to competition.

In taking a position on these drafts, a conflict between the competitive and the environmental objective will often occur, as happens in other areas of legislation as well. This cannot, of course, be an instance where competition policy resolves this conflict one way or the other; this right must be reserved for the government, parliament and the sovereign people. The task of the competition authority consists rather in explaining as completely as possible the effects of competition. But under certain circumstances, it can--insofar as it is aware of such--also list alternative environmental protection measures with a less decisive effect

on competition policy or propose an examination of the matter to see whether such measures are possible.

If a measure results in unavoidable effects on competition, the response will have to be assumed on the possibility that these effects are neutral, that is, that they affect all involved to the same degree. But this ideal is often difficult to achieve, particularly when it is a question of export companies obliged to enter foreign markets against competitors burdened with fewer extensive environmental protection requirements. But in this case protective measures may not always be rejected with the mere argument that they lead to unequal conditions of competition, since environmental policy progress is otherwise either not possible at all or possible only on the basis of international agreements.

On the other hand, in regard to competition policy it may be assumed that imported products whose nature and quality--thus not their type of manufacture--meet lower environmental requirements than those met by domestic producers' goods, cannot be offered in domestic markets. Problems of this type could arise, for example, if the lead content of gasoline were to be reduced by government decree. Based on the hypothetical regulation, in this instance various effects on competition are not ruled out in the supply of domestic and foreign refined gasoline. An appropriate examination of the matter by the cartel commission on the basis of article 19 of the cartel law is therefore--as this example shows--essential for practical reasons.

Civil Code Judgment of Environmentally Related Competition Hindrances

In the case of the civil code, connections with the cartel law could essentially exist when a cartel or similar organization asserts that an exclusion or considerable restriction in competition should be allowed for reasons of environmental protection, in other words, that this restriction should fall under the exception provisions of article 5. This question could arise particularly when environmental protection methods are developed by cooperation between the companies involved and when subsequently hindered by cartel agreements to the effect that non-participating outsiders can provide supply more cheaply on the basis of their methods and products, which are less beneficial environmentally. (A possible example of this would be the joint development of equipment for decontaminating the exhaust gases of motor vehicles, combined with a cartel-instigated boycott of outsiders by suppliers and/or customers). Although there are no decisions of this type as yet, it is not impossible to show, as a hypothetical example, that competition hindrance of this nature could be declared admissible under certain circumstances, that is, that it would be considered preponderantly protection-worthy.

In this connection, of course, the courts will always have to closely examine the question of whether environmental protection represents only a mere secondary purpose or even just a pretext for restricting competition

for other, real motives. This possibility must definitely be taken into consideration because of the popularity of environmental protection provision. There can hardly be any doubt as well that environmental protection cartels of one kind or another could then take on a certain practical importance, if it is thus possible to prevent respective government environmental protection measures from being decreed. A further possibility in this respect is a cartel agreement to delay or neglect introducing environmental protection improvements of products. It could have no chance, of course, of being considered protection-worthy in the sense of article 5.

Special Studies

In the case of special studies concerning the economically and socially harmful effects of cartels and similar organizations, points of contact are possible between environmental protection and the cartel law. This proves to be true when a cartel or similar organization produces favorable or unfavorable effects on the environment. As soon as environmental protection represents an objective of economic and social policy, it becomes part of a system of objectives that is also decisive for judging the effects of cartels. The effect of environmental protection must accordingly be taken into account also in balancing the useful and harmful effects of cartels, as in balancing the corresponding effects of the cartel on the possibility of competition, extent of competition, costs and other similar items.

This will be particularly significant for cartels that do not merely produce environmental effects, but primarily or considerably serve the aforementioned collective achievement of environmental protection tasks. This is not to say, however, that equal importance must be attributed to the environmental effects of such cartels, as to the effects on competition, in striking a balance. This matter cannot be discussed here in greater detail, however; as is well known, it involves matters other than environmental protection in the case of cartel effects as well.

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WEST GERMANY

NATIONWIDE NEGLECT, DESTRUCTION ENDANGER NATIONAL PARKS

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[Text] The listening operation began in February and lasted well into May. From camouflaged mobile homes, the observation teams stood guard, around the clock, monitoring microphones which had been suspended nearby from the branches of tall beech trees.

The trees had been protected with barbed wire and their exact location was kept secret--a camouflaged operation along the shores of Holstein lakes. The targets of observation were the nests of the last four pairs of white-tailed eagles living in freedom in West Germany.

Three decades ago there were still 50 of them but chemical pesticides and synthetic substance, which in the meantime have become ever-present in nature, decimated the white-tailed eagle population to such an extent that the bird protectors could only do one thing: to preserve the last specimens of this type of claw-bird from egg thieves and nest robbers by means of barbed wire and listening devices during the hatching period and while the young were being raised. (Among bird egg collectors, the eggs of the white-tailed eagle will presently bring more than DM800, each; young eagles, fresh from the nest, are sold for many times that amount.)

"This is one of the saddest examples of the decline of our environment," said Kiel biologist Kuno Brehm and it is not by chance that the white-tailed eagle, which is almost extinct, provided the optical symbol for nature protection in Germany.

Under the heading "nature preserve" in a black silhouette, on a green-bordered, triangular piece of sheet metal, it marks first-grade nature preserves, constituting the highest among the four categories of protected German areas--with the exception of North Rhine-Westphalia where the state coat of arms is used.

A total of 1,133 areas in West Germany have in the meantime been given the status of NSG (nature preserve) and are thus considered regions where "special protection for nature and landscape as a whole or in individual parts is required" (Federal Nature Protection Law).

With the exception of protected North Sea flats, so far 217,566 hectares of German landscape have been so classified--"for scientific, natural-history, or geographic reasons," as it says in the text of the law, in order to preserve "communities or sites of certain wild plants or wild animal species because of their rarity, their special peculiarity, or outstanding beauty."

The land, on which "on all actions leading to destruction, damage, or alteration as well as lasting disturbance" are outlawed, extends from Huelbe on Mt. Maertels, a pond in the Karst of the Swabian Alps barely the size of three tennis courts, all the way to the high-elevation meadow, mountain forest, and floodplain regions of the Ammergau Mountains which, with an area of 27,600 hectares, represent West Germany's biggest nature preserve.

One might think that these are environmental oases. We might presume that there are more than 1,000 such reservations for flora and fauna that can still be found in the primal state. One might assume that this provides perfect protection granted to rare animals and plants, entire biotopes, and terrain formations by one general federal law, by five state nature protection laws, as well as by the 1935 German nature protection law (which is still valid in the city-state, in Saarland, in Hesse, and in Lower Saxony).

But that is not the case. Nature protection in West Germany is "mostly on paper," according to biologist Wolfgang Erz, director of the nature protection and animal ecology institute of the Bad Godesberg Federal Institute of Nature Protection and Landscape Ecology.

Regardless of all government regulations, there is a lot of shooting going on in Germany's nature preserves with tank guns and there is a lot of drilling going on for natural resources; dams are being built and overland power lines are also being erected. Companies dig gravel pits, clubs build athletic fields, and communities lay out hiking and physical fitness trails.

A metal white-tailed eagle indicates nature preserves where there is nothing left to preserve because rare grasses and mosses were trampled long ago, because a swamp long ago turned into a sewer because of waste water discharge. Along the edge of the Pfungstaedt Moor, in Darmstadt Landkreis, there is, next to the grain-bordered triangular shield, even a sign showing the way to the community garbage dump--smack in the middle of the nature preserve.

"The More Serious the Interference, the More Rarely Is It Eliminated"

"This is all wonderful," commented forestry director Karl Friedrich Wentzel, the state representative for nature protection in Hesse, "but unfortunately, the authorities do not implement those regulations; the more serious the outside interference, the more rarely is it ever corrected."

Nature reservations are being destroyed, preserves "deteriorate," because, according to the experiences of botany professor Ernst Preisling in Hanover, "Interests other than nature protection as a rule have priority"; and

institute director Erz considers nature protection only a "kind of bankruptcy administration."

To protect higher-ranking Bonn government and NATO interests, for example, Her British Majesty's tank drivers are allowed to churn up the juniper landscape with their roaring Chieftains on 1,900 hectares of the Luenberg Heath national park, a privately-owned nature preserve. Hamburg business tycoon, ship operator, and maecenas Alfred C. Toepfer, chairman of the National Park Association, Incorporated, complains about the federal government because the use of nature preserves for maneuver purposes is unconstitutional and because it is "no longer legitimate because of the priority of public interest as expressed by environmental protection."

Our Belgian allies are training in the Wahn Heath nature preserve, right next to the Cologne-Bonn airport, and the state authorities can do "nothing whatsoever" there against tanks and guns and against "the construction of military roads"; someone at the Duesseldorf agriculture ministry explained regretfully: "NATO law comes ahead of state law."

Placed under protection just 3 years ago, a part of the North Friesian tideland waters is once again freely available. For coast protection, the Nordstrander Bay is being closed off against the open sea by a foredam and an area of 6,000 hectares is thus deprived of the influence of ebb and tide even though it is unique on earth, even though the ocean sweeps in twice a day in regular tidal rhythm.

"Of course, we nature protection people are not happy about that," said government agriculture director Hans Lux on the Kiel agriculture ministry. But all they can do is feel sad about the loss of almost untouched living space for maritime birds and seals, mud crabs and tideland snails. The water industry people argue according to Lux "quite irrefutably" that "only this solution is optimum" and none other.

On Mt. Hoher Meissner in Hesse--where metaphysics expert Ludwig Klages in 1913 delivered his speech on "Man and the Earth" to the Free German Youth--the issue is 1,500 jobs vs. a nature preserve: because the deposits are exhausted, the Prussian Electric Power Corporation (Preag) wants to close its brown coal pits and its Borken power plant in the Schwalm-Eder Kreis and layoff 1,500 workers by the middle of the eighties. However, Preag exploratory drillings in "Weiberhemd," a high moor with a rare flora in the Meissner region, showed that there is enough brown coal there to keep the boilers at Borken going under steam for a couple of more years. Hesse's government will presumably approve continuation of mining operations here even if Weiberhemd should be torn to shreds as a result.

Healthy landscape is also being cut up for a 220,000-volt cross-country power line for the international power grid, which power companies want to build through the uplands in the form of 50-meter tall pylons from Oberbrunn, south of Munich, to the Austrian border. Over a distance of 15 kilometers, the

power line cuts across the Karwendel nature preserve and the Karwendel foothills over a width of between 20 and 500 meters; until recently, this was still central Europe's biggest uninhabited region. Economy minister Anton Jaumann countered "strong objections" from Upper Bavaria's nature protectors by saying that "without the power line, there would be a considerable reduction in Bavaria's reliable supply with electric energy."

If not as a result of consideration for NATO obligations, fear of North Sea storms, or energy shortages, nature protection--an object of bankruptcy--was frittered away due to the wrong kind of planning, due to the failure of the authorities, or simply through sloppiness.

This happened in the Rantum Basin nature preserve on Sylt which in 1973 was still officially shown as "a unique hatching area for swamp and water bird species along the North Sea coast."

Annually growing floods of waste water from the treatment plant of the island city of Westerland have caused sweet-water plants to turn to weeds in place of short-growing salt-water vegetation, such as glasswort. Many of the tideland birds avoid new vegetation because it blocks their view of approaching enemies while hatching--and these are by no means biological trifles which might be of significance only to scientists in remote research areas.

A camping area was set up, followed by a vacation center, right next to the Weissenhaeuser Broek nature preserve, once upon a time declared a protected area since it was the last natural dune landscape along West Germany's Baltic Sea coast. Now the area has been "disfigured, chopped up, and cut down" by spa and beach visitors according to biologist Brehm--and this again is significant not only for experts who know their way around among grasses and worms.

Engaging in nature protection primarily as a kind of nostalgia--the way our German forefathers used to do in their loden cloth coats and with their walking sticks--would be a dangerous misconception. An expedition through nature with a butterfly net and botanist's collection box, the search for rare roots, and the act of listening to our feathery songsters--nature protection long ago ceased to be something for these odd fellows.

Mankind could certainly get along without moonwort, cotton grass, or the white-tailed eagle and the mammoth and the aurochs are also gone--but the disappearance of a species today is like a signal. Stepped-up cultivation, the spread of human settlement, and increasing environmental pollution but also mass tourism out into nature, which has been praised for recreational reasons--all of these eat away at the remnants of nature, at the multiplicity of its species, and thus at its genetic substance.

"Protection for the Last Sites of Genetic Rejuvenation"

Environmentalist and author Horst Stern put it this way: "Protection for species after all goes far beyond the conservation of natural monuments.

We are preserving the last intact biotopes as ecological cells, as sanctuaries for genetic material from which we can get rejuvenation and multiplication."

As biologist Erz explains, a nature preserve assumes importance also as a "model or testing area for environmental development." Environmental planning, protection against pollution, or the determination of the contamination burden in turn require knowledge on the developmental laws of natural life foundations and this information can be obtained only in an intact biotope.

But hardly anything is left intact. According to projections by the Bad Godesberg research institute, based on surveys in four federal states, 40 percent of the nature preserves are deserving of their status "from the botanical viewpoint" only "with restrictions" and 10 percent do not deserve such status at all any longer. (About 80 percent of all areas were placed under protection only because of their botanical value or, among other things, because of that value.) According to estimates by institute director Erz, at most 100 out of the more than 1,100 nature preserves are getting systematic care and maintenance and at most one dozen are being watched and guarded.

This "story of defeat" (Erz) of course was preprogrammed almost three generations ago. To be sure, Drachenfels was the first central European nature preserve to be placed under protection back in 1829 as a result of a citizens initiative sponsored by outstanding residents of Bonn and environs (and the area is still a part of the Siebengebirge nature preserve today); in 1859, for example, the Ducal Brunswick Chamber ordered the preservation of particularly beautiful or primeval forests.

To be sure, Bremen Moor researcher, Professor C. A. Weber, back in 1901 submitted a far-sighted nature protection program which would be revolutionary even by present-day standards. Weber recommended the establishment of a few but large-area reservations, for each type of intact German landscape at that time, such as, a vast heath or coastal region, a piece of swampland or mountain land. According to Weber, the government would "have to make completely impossible any serious disturbance of or danger to the protected animals and plants, especially as far as collectors are concerned."

Weber's ideas coincide almost down to the last detail with the standards established after World War II by the "International Union for Conservation of Nature and Natural Resources" (IUCN) and by the UN; these standards apply to so-called national parks which on German soil had until then been established only in the Free State of Bavaria--and then also only with abundant concessions to the tourist industry and the lumber industry; since 1970, there has been a Bavarian Forest National Park and recently a legal decree was passed on the planned Berchtesgaden Alpine and National Park (DER SPIEGEL, No 9, 1977).

But instead of the progressive Weber thesis, a concept prevailed which the heath poet and early environmentalist Hermann Loens at that time rather

mockingly referred to as "conwentzionell" nature protection, after its inventor, the Danzig professor Hugo Conwetz.

In a memorandum, written in 1904 for the Prussian culture ministry, the director of the West Prussian provincial museum came out with a piece of advice--which was rather cheap compared to Weber's recommendations--to the effect that reservations be set up "scattered throughout the entire area, if possible in each small part of the area, consisting of small sections with different characteristics," for example, a lake or a stagnant water body here, a floodplain meadow there, a beach dune or a sunny hill or a little swamp or a heath or forest area."

Here is the consequence of the Conwetz advice which is having its disastrous effect to this very day: the government did not purchase any large reservations, with a few exceptions there is no government protection and care for these reservations, as Weber had demanded; instead, the terrain is hopelessly split up into hundreds of mostly privately-owned pieces of land.

About 3/4 of all German nature preserves are no bigger than 100 hectares; more than half cover only 20 hectares and less. Following Conwetz a piece of swamp of heath over here, a floodplain or a little wood over there were fenced off--in the view of biologist Erz today--"nothing more" and an opportunity was missed to "integrate the reservations into the general landscape."

Because nature protection as a rule has its limits where the metal signs have been put up, they "remained islands" (Erz)--for the most part highly endangered islands. Farmers drained their fields very close to the high moors whose characteristics include the complete absence of trees and a water level reaching all the way to the upper edge. That also led to the disappearance of such typical high-moor plants as cotton grass or sundew, along with animals such as wild ducks or curlews; now there is a thick birch forest growing on what used to be wide open areas; this has been happening since 1966, for example, in the Recker Moor in Muensterland.

"The Politicians Failed to Grasp What This Is All About"

Pollen blown in from neighboring pine stands turned quite a few dunes or heaths into pine shrubbery. Or rain water washed artificial fertilizer from the surrounding fields into a protected, low-nutrient pond and worldwide plants, such as reeds or water lilies now displaced the rare plants which had until then been at home in the pond, such as pondweed or the extremely rare quillwort; these were malformations which either cannot be corrected at all or only with a great effort.

Most federal states have been allocating major amounts for the care and recovery of reservations and the purchase of land for nature preserves in their budgets only in recent times. Baden-Wuerttemberg increased the budget allocations for "nature and landscape care" from 1.8 to 3.2 millions between 1975

and 1977. In 1972, North Rhine-Westphalia began to "step up" its purchases of nature preserves and now spends 7 millions per year for that, according to the Duesseldorf agriculture ministry, "more than any other state."

"Because the politicians have still not grasped what nature protection is all about," it so happened--according to Hanover professor Preising--that the nature protection authorities as a rule are comparatively worse off financially than any other department, that there are not enough job slots for experts, that, in the lower-level nature protection agencies, in the kreis administrations, the expert for school or police affairs must sometimes also take care of nature protection on a part-time basis.

"The absence of political clout," according to Hubert Weinzierl, chairman of the "Bavarian Nature Protection League," is responsible for the fact that wherever--rarely enough--active nature protection is actually being carried out in West Germany, this is done, if at all, only due to private initiative and mostly only by associations which have gotten meager public subsidies.

For example, the Bavarian Nature Protection League, founded in 1913, purchased certain pieces of land for the purpose of leaving them "in the natural state" in order thus to implement the establishment of nature preserves. The Hessian Society of Ornithology and Nature Protection expertly maintains a nature preserve near Oberursel with the help of donations and membership dues.

Like the Nature Preserve Association, Incorporated, on Lueneburg Heath, the Sauerland Mountain Club has its own nature preserve. Members of fauna associations move into the moors and heaths in order to chop down birch trees or to dig ditches. Clubs of ornithologists, such as the "German League for Bird Protection" or the "Jordsand Club," which acquired the Norderoog tideland flats back in 1909 as bird sanctuary, operate and supervise preserves. "Without part-time efforts, the authorities would not have any chance whatsoever of coping with these problems," said Norbert Jorek of the Nature and Environmental Protection League in North Rhine-Westphalia.

Whenever members of the State Association of Schleswig-Holstein Flying Sports Clubs zoom over the land between the oceans, they also inspect specific nature preserves and record their observations on a "report sheet" such as: "Many pedestrians."

On Bottsand, along the Bay of Kiel, the members of the Kiel FKK [expansion unknown] Club--by way of reciprocity for a piece of nudist bathing beach--make sure that "nobody runs into" the neighboring nature preserve, according to Ranger Lux. "They pick up garbage and tell the bathers what this is all about."

But increased political clout alone would not do the job. The rule is still entirely too magnanimous and that rule is based on the special clause according to which nature preserves, in the wording of federal law "can be made accessible to the general public."

According to surveys by the Bad Godesberg federal research institute, 52 percent of the nature preserves are officially "used for recreation and are full of recreational facilities," such as hiking trails, parking lots, or physical fitness trails; the survey also tells us what that means: 43 percent of all West German nature preserves are "bothered" by recreational activities and of that number almost 1/3 are "permanently bothered"--by campers or hikers who do damage "extending over several periods of vegetation and/or damaging parts of the area."

It is of course necessary to make it clear that a nature preserve is not supposed to be just any pretty piece of land, a pond or a cool meadow, which must be protected, but often the last intact biotope, the last specimens of a species of animals or plants which have barely escaped extinction.

That would mean keeping out hikers, hunters, and free-time explorers; it would mean that the nature protection agencies, as Horst Stern demanded in addressing the 1974 German nature protection convention, "should at last tell us that serious protection for many heavily threatened biotopes reserved for rare animals and plants necessarily signifies nature protection against man."

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